Grizzly Industrial, Inc.®

MODEL G0704
MILL/DRILL WITH STAND
OWNER'S MANUAL
(For models manufactured since 04/13)

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WARNING: NO PORTION OF THIS MANUAL MAY BE REPRODUCED IN ANY SHAPE OR FORM WITHOUT THE WRITTEN APPROVAL OF GRIZZLY INDUSTRIAL, INC.
#JB12468 PRINTED IN CHINA

⚠ WARNING!

This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators.

Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine/tool is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, cutting/sanding/grinding tool integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

⚠ WARNING!

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks, cement and other masonry products.**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

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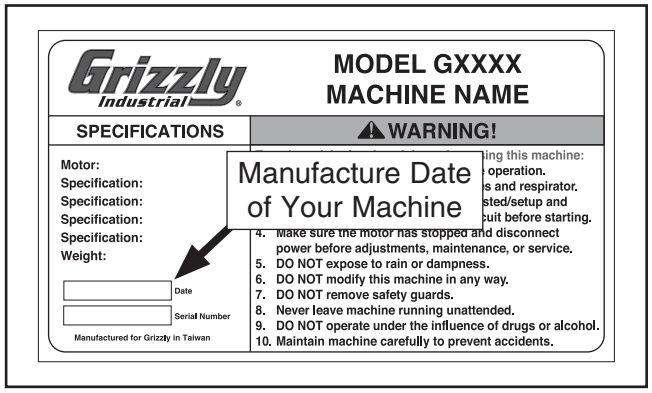
INTRODUCTION

Manual Accuracy

We are proud to offer this manual with your new machine! We've made every effort to be exact with the instructions, specifications, drawings, and photographs of the machine we used when writing this manual. However, sometimes we still make an occasional mistake.

Also, owing to our policy of continuous improvement, **your machine may not exactly match the manual**. If you find this to be the case, and the difference between the manual and machine leaves you in doubt, check our website for the latest manual update or call technical support for help.

Before calling, find the manufacture date of your machine by looking at the date stamped into the machine ID label (see below). This will help us determine if the manual version you received matches the manufacture date of your machine.



For your convenience, we post all available manuals and manual updates for free on our website at **www.grizzly.com**. Any updates to your model of machine will be reflected in these documents as soon as they are complete.

Contact Info

We stand behind our machines. If you have any questions or need help, use the information below to contact us. Before contacting, please get the serial number and manufacture date of your machine. This will help us help you faster.

Grizzly Technical Support
1203 Lycoming Mall Circle
Muncy, PA 17756
Phone: (570) 546-9663
Email: techsupport@grizzly.com

We want your feedback on this manual. What did you like about it? Where could it be improved? Please take a few minutes to give us feedback.

Grizzly Documentation Manager
P.O. Box 2069
Bellingham, WA 98227-2069
Email: manuals@grizzly.com

Machine Description

The mill/drill is used to shape metal and solid workpieces by removing material with the use of a rotating cutting tool.

In milling operations, the cutting tool remains stationary while the workpiece is drawn across it by moving the table.

In drilling operations, the workpiece is held stationary on the table while the cutting tool moves up-and-down with the movement of the spindle and head.

Identification

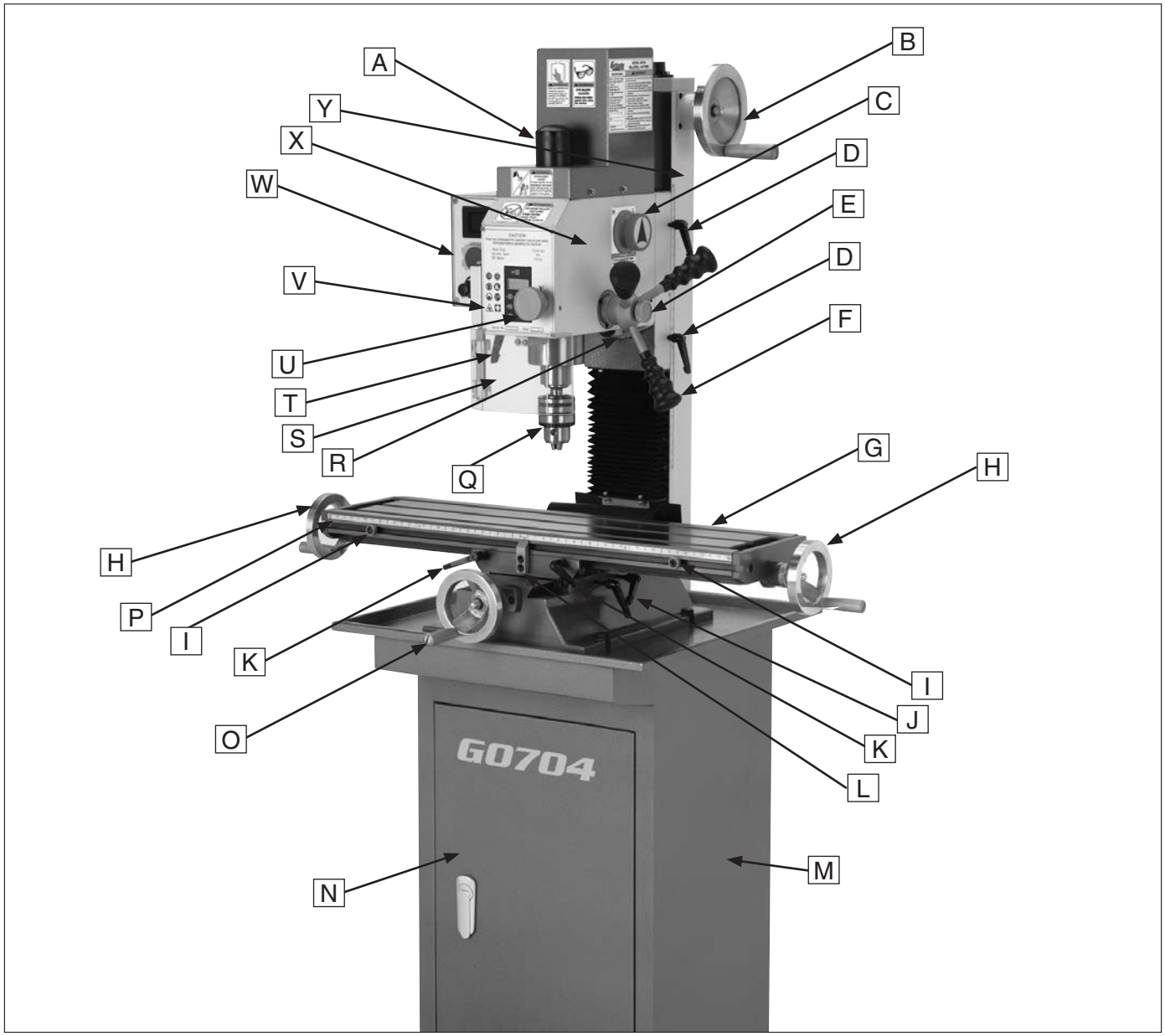


Figure 1. G0704 Identification.

A. Drawbar Cap and Drawbar
B. Vertical (Z-Axis) Handwheel
C. Speed Range Selector Knob
D. Vertical Travel Lock
E. Fine Feed Lock Knob
F. Quill Feed Lever
G. Table
H. Longitudinal (X-Axis) Handwheel
I. Longitudinal Table Stop
J. Table Cross Travel Locks
K. Table Longitudinal Travel Lock
L. Table Center Stop
M. Machine Stand
N. Storage Access Door
O. Cross (Y-Axis) Handwheel
P. Longitudinal Scalev
Q. Drill Chuck
R. Headstock Tilt Scale
S. Chip Guard
T. Quill Lock Lever
U. Fine Feed Knob
V. Digital Readout (**Page 4**)
W. Control Panel (**Page 4**)
X. Headstock
Y. Column

Electronic Controls Identification

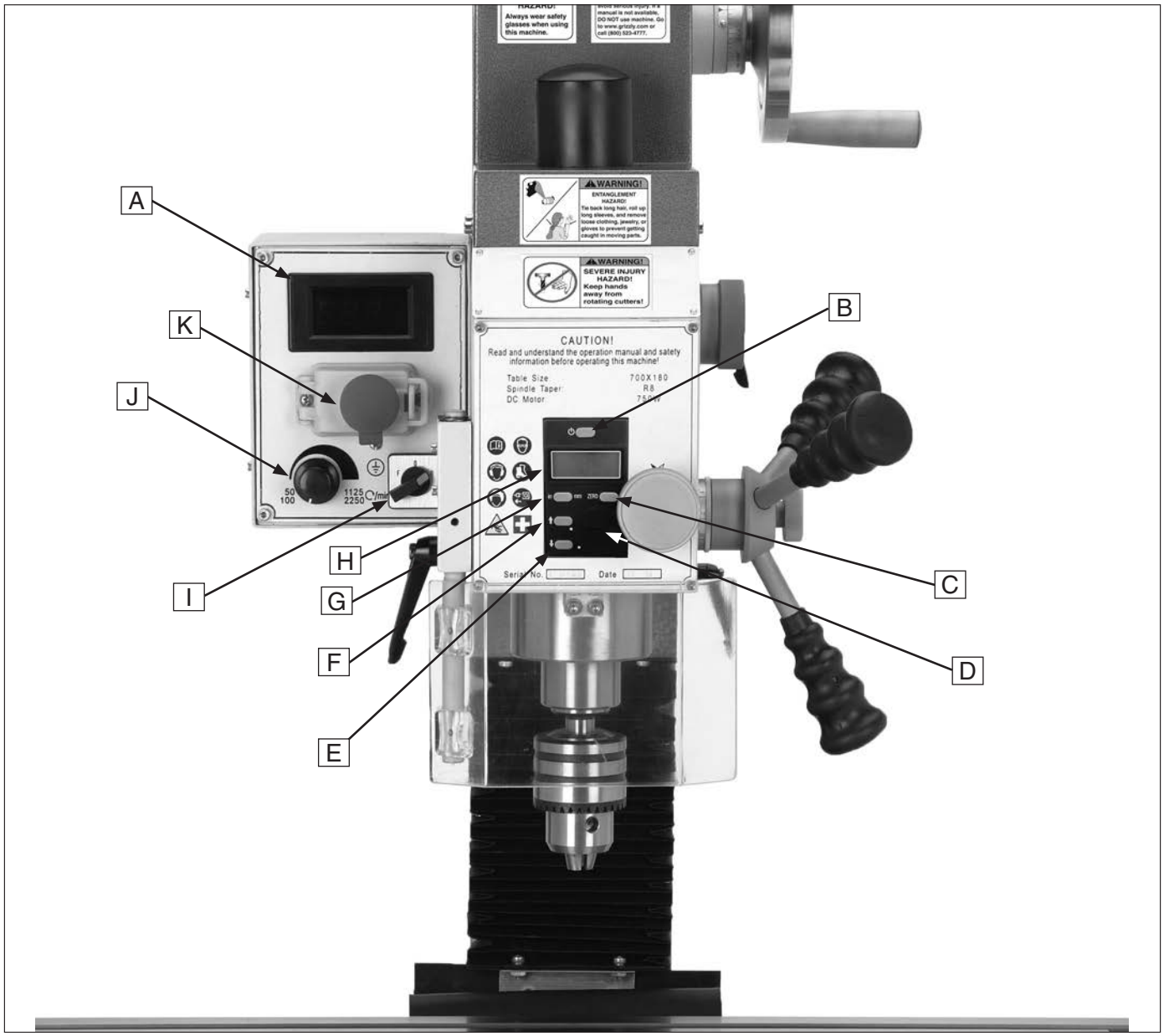


Figure 2. G0704 electronic controls identification.

A. Spindle RPM Readout
B. Spindle Digital Readout Power Button
C. Digital Readout ZERO Button
D. Digital Readout Battery Cover & Battery
E. Spindle Depth Display DECREASE Button
F. Spindle Depth Display INCREASE Button
G. IN/MM Unit Selection Button
H. Spindle Depth Display
I. Spindle Direction Selection Knob
J. Variable Spindle Speed Knob
K. START/Emergency Stop Buttons

MACHINE DATA SHEET

Customer Service #: (570) 546-9663 · To Order Call: (800) 523-4777 · Fax #: (800) 438-5901

MODEL G0704 DRILL/MILL WITH STAND

Product Dimensions:

Weight..... 265 lbs.
Width (side-to-side) x Depth (front-to-back) x Height..... 38 x 24 x 31 in.
Footprint (Length x Width)..... 15-3/4 x 16-1/2 in.
Space Required for Full Range of Movement (Width x Depth)..... 57 x 25 in.

Shipping Dimensions:

Carton #1

Type..... Wood Crate
Content..... Machine
Weight..... 295 lbs.
Length x Width x Height..... 30 x 28 x 36 in.

Carton #2

Type..... Cardboard Box
Content..... Stand
Weight..... 77 lbs.
Length x Width x Height..... 17 x 17 x 33 in.

Electrical:

Power Requirement..... 110V, Single-Phase, 60 Hz
Prewired Voltage..... 110V
Full-Load Current Rating..... 12A
Minimum Circuit Size..... 15A
Connection Type..... Cord & Plug
Power Cord Included..... Yes
Power Cord Length..... 6 ft.
Power Cord Gauge..... 16 AWG
Plug Included..... Yes
Included Plug Type..... 5-15
Switch Type..... ON/OFF Push Button Switch w/Safety Cover

Motors:

Main

Type..... Universal
Horsepower..... 1 HP
Phase..... Single-Phase
Amps..... 12A
Speed..... 4300 RPM
Power Transfer ..... Gear Drive
Bearings..... Shielded & Permanently Lubricated

Main Specifications:

Operation Info

Spindle Travel	2 in.
Max Distance Spindle to Column	7-1/2 in.
Max Distance Spindle to Table	13 in.
Longitudinal Table Travel (X-Axis)	18-7/8 in.
Cross Table Travel (Y-Axis)	6-7/8 in.
Vertical Head Travel (Z-Axis)	11 in.
Head Tilt (Left/Right)	90 deg.
Drilling Capacity for Cast Iron	3/4 in.
Drilling Capacity for Steel	5/8 in.
End Milling Capacity	3/4 in.
Face Milling Capacity	2-1/2 in.

Table Info

Table Length	26-5/8 in.
Table Width	7-1/16 in.
Table Thickness	1-3/4 in.
Number of T-Slots	3
T-Slot Size	7/16 in.
T-Slots Centers	2-1/2 in.

Spindle Info

Spindle Taper	R-8
Number of Vertical Spindle Speeds	Variable
Range of Vertical Spindle Speeds	50 – 2250 RPM
Quill Diameter	2.36 in.
Drawbar Thread Size	7/16-20
Drawbar Length	9-11/16 in.
Spindle Bearings	Tapered Roller Bearings

Construction

Spindle Housing/Quill	Cast Iron
Table	Precision-Ground Cast Iron
Head	Cast Iron
Column/Base	Cast Iron
Base	Cast Iron
Stand	Steel
Paint Type/Finish	Enamel

Other Specifications:

Country of Origin	China
Warranty	1 Year
Approximate Assembly & Setup Time	1 Hour
Serial Number Location	ID Label on Head Casting
Sound Rating	80 dB
ISO 9001 Factory	Yes
CSA, ETL, or UL Certified/Listed	No

Features:

Digital spindle scale reads metric, inches, zero, set, on/off
Forward/reverse switch
Chip guard
Digital display for spindle speed
Dovetail column
Front mounted fine feed knob
Coolant trough

Accessories Included:

Drill chuck 3–16mm with B16 taper
Drill chuck arbor B16 x R8
Two T-bolts
Two open-ended combo wrenches
Chuck key
Oil bottle
Extra fuse
Hex wrenches
Standard and Phillips screwdrivers
Tool box

SECTION 1: SAFETY

For Your Own Safety, Read Instruction Manual Before Operating This Machine

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures. Always use common sense and good judgment.

⚠DANGER **Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.**

⚠WARNING **Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.**

⚠CAUTION **Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury. It may also be used to alert against unsafe practices.**

NOTICE **This symbol is used to alert the user to useful information about proper operation of the machine.**

Safety Instructions for Machinery

⚠WARNING

OWNER'S MANUAL. Read and understand this owner's manual BEFORE using machine.

TRAINED OPERATORS ONLY. Untrained operators have a higher risk of being hurt or killed. Only allow trained/supervised people to use this machine. When machine is not being used, disconnect power, remove switch keys, or lock-out machine to prevent unauthorized use—especially around children. Make workshop kid proof!

DANGEROUS ENVIRONMENTS. Do not use machinery in areas that are wet, cluttered, or have poor lighting. Operating machinery in these areas greatly increases the risk of accidents and injury.

MENTAL ALERTNESS REQUIRED. Full mental alertness is required for safe operation of machinery. Never operate under the influence of drugs or alcohol, when tired, or when distracted.

ELECTRICAL EQUIPMENT INJURY RISKS. You can be shocked, burned, or killed by touching live electrical components or improperly grounded machinery. To reduce this risk, only allow qualified service personnel to do electrical installation or repair work, and always disconnect power before accessing or exposing electrical equipment.

DISCONNECT POWER FIRST. Always disconnect machine from power supply BEFORE making adjustments, changing tooling, or servicing machine. This prevents an injury risk from unintended startup or contact with live electrical components.

EYE PROTECTION. Always wear ANSI-approved safety glasses or a face shield when operating or observing machinery to reduce the risk of eye injury or blindness from flying particles. Everyday eyeglasses are not approved safety glasses.

⚠WARNING

WEARING PROPER APPAREL. Do not wear clothing, apparel or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to avoid accidental slips, which could cause loss of workpiece control.

HAZARDOUS DUST. Dust created while using machinery may cause cancer, birth defects, or long-term respiratory damage. Be aware of dust hazards associated with each workpiece material, and always wear a NIOSH-approved respirator to reduce your risk.

HEARING PROTECTION. Always wear hearing protection when operating or observing loud machinery. Extended exposure to this noise without hearing protection can cause permanent hearing loss.

REMOVE ADJUSTING TOOLS. Tools left on machinery can become dangerous projectiles upon startup. Never leave chuck keys, wrenches, or any other tools on machine. Always verify removal before starting!

INTENDED USAGE. Only use machine for its intended purpose and never make modifications not approved by Grizzly. Modifying machine or using it differently than intended may result in malfunction or mechanical failure that can lead to serious personal injury or death!

AWKWARD POSITIONS. Keep proper footing and balance at all times when operating machine. Do not overreach! Avoid awkward hand positions that make workpiece control difficult or increase the risk of accidental injury.

CHILDREN & BYSTANDERS. Keep children and bystanders at a safe distance from the work area. Stop using machine if they become a distraction.

GUARDS & COVERS. Guards and covers reduce accidental contact with moving parts or flying debris. Make sure they are properly installed, undamaged, and working correctly.

FORCING MACHINERY. Do not force machine. It will do the job safer and better at the rate for which it was designed.

NEVER STAND ON MACHINE. Serious injury may occur if machine is tipped or if the cutting tool is unintentionally contacted.

STABLE MACHINE. Unexpected movement during operation greatly increases risk of injury or loss of control. Before starting, verify machine is stable and mobile base (if used) is locked.

USE RECOMMENDED ACCESSORIES. Consult this owner's manual or the manufacturer for recommended accessories. Using improper accessories will increase the risk of serious injury.

UNATTENDED OPERATION. To reduce the risk of accidental injury, turn machine ***OFF*** and ensure all moving parts completely stop before walking away. Never leave machine running while unattended.

MAINTAIN WITH CARE. Follow all maintenance instructions and lubrication schedules to keep machine in good working condition. A machine that is improperly maintained could malfunction, leading to serious personal injury or death.

CHECK DAMAGED PARTS. Regularly inspect machine for any condition that may affect safe operation. Immediately repair or replace damaged or mis-adjusted parts before operating machine.

MAINTAIN POWER CORDS. When disconnecting cord-connected machines from power, grab and pull the plug—NOT the cord. Pulling the cord may damage the wires inside. Do not handle cord/plug with wet hands. Avoid cord damage by keeping it away from heated surfaces, high traffic areas, harsh chemicals, and wet/damp locations.

EXPERIENCING DIFFICULTIES. If at any time you experience difficulties performing the intended operation, stop using the machine! Contact our Technical Support at (570) 546-9663.

⚠WARNING
Additional Safety for Mill/Drills

UNDERSTANDING CONTROLS. Make sure you understand the use and operation of all controls.

SAFETY ACCESSORIES. Always use a chip guard in addition to your safety glasses when milling/drilling to prevent bodily injury.

WORK HOLDING. Before starting the machine, be certain the workpiece has been properly clamped to the table. NEVER hold the workpiece by hand when using the mill/drill.

CHUCK KEY SAFETY. Always remove your chuck key, drawbar wrench, and any service tools immediately after use.

SPINDLE SPEEDS. Select the spindle speed that is appropriate for the type of work and material. Allow the mill/drill to gain full speed before beginning a cut.

POWER DISRUPTION. In the event of a local power outage during use of the mill, drill turn ***OFF*** all switches to avoid possible sudden start up once power is restored.

SPINDLE DIRECTION CHANGES. Never reverse spindle direction while the spindle is turning.

MACHINE CARE AND MAINTENANCE. Never operate the mill/drill with damaged or worn parts. Maintain your mill/drill in proper working condition. Perform routine inspections and maintenance promptly. Put away adjustment tools after use.

STOPPING SPINDLE. DO NOT stop the mill/drill using your hand against the chuck.

BE ATTENTIVE. DO NOT leave the mill/drill running unattended for any reason.

DISCONNECT POWER. Make sure the mill/drill is turned ***OFF***, disconnected from its power source and all moving parts have come to a complete stop before starting any inspection, adjustment, or maintenance procedure.

AVOIDING ENTANGLEMENT. Keep loose clothing articles such as sleeves, belts or jewelry items away from the spindle. Never wear gloves when operating the mill/drill.

TOOL HOLDING. Always use the proper tools for the material you are machining. Make sure they are held firmly in the proper tool holder for the job.

CLEAN-UP. DO NOT clear chips by hand. Use a brush, and never clear chips while the spindle is turning.

CUTTING TOOL INSPECTION. Inspect drills and end mills for sharpness, chips, or cracks before each use. Replace dull, chipped, or cracked cutting tools immediately. Handle new cutting tools with care. Leading edges are very sharp and can cause lacerations.

EXPERIENCING DIFFICULTIES. If at any time you are experiencing difficulties performing the intended operation, stop using the machine! Contact our Technical Support at (570) 546-9663.

⚠WARNING

No list of safety guidelines can be complete. Every shop environment is different. Like all machines there is danger associated with the Model G0704. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this machine with respect and caution to lessen the possibility of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.

SECTION 2: POWER SUPPLY

Availability

Before installing the machine, consider the availability and proximity of the required power supply circuit. If an existing circuit does not meet the requirements for this machine, a new circuit must be installed. To minimize the risk of electrocution, fire, or equipment damage, installation work and electrical wiring must be done by an electrican or qualified service personnel in accordance with all applicable codes and standards.

⚠WARNING

Electrocution, fire, or equipment damage may occur if machine is not correctly grounded and connected to the power supply.

Full-Load Current Rating

The full-load current rating is the amperage a machine draws at 100% of the rated output power. On machines with multiple motors, this is the amperage drawn by the largest motor or sum of all motors and electrical devices that might operate at one time during normal operations.

Full-Load Current Rating at 110V.....3.2 Amps

The full-load current is not the maximum amount of amps that the machine will draw. If the machine is overloaded, it will draw additional amps beyond the full-load rating.

If the machine is overloaded for a sufficient length of time, damage, overheating, or fire may result—especially if connected to an undersized circuit. To reduce the risk of these hazards, avoid overloading the machine during operation and make sure it is connected to a power supply circuit that meets the requirements in the following section.

Circuit Requirements

This machine is prewired to operate on a 110V power supply circuit that has a verified ground and meets the following requirements:

Nominal Voltage 110V/120V
Cycle.....60 Hz
Phase..... Single-Phase
Power Supply Circuit ..... 15 Amps

A power supply circuit includes all electrical equipment between the breaker box or fuse panel in the building and the machine. The power supply circuit used for this machine must be sized to safely handle the full-load current drawn from the machine for an extended period of time. (If this machine is connected to a circuit protected by fuses, use a time delay fuse marked D.)

⚠CAUTION

For your own safety and protection of property, consult an electrician if you are unsure about wiring practices or electrical codes in your area.

Note: *The circuit requirements listed in this manual apply to a dedicated circuit—where only one machine will be running at a time. If this machine will be connected to a shared circuit where multiple machines will be running at the same time, consult a qualified electrician to ensure that the circuit is properly sized for safe operation.*

Grounding & Plug Requirements

This machine MUST be grounded. In the event of certain malfunctions or breakdowns, grounding reduces the risk of electric shock by providing a path of least resistance for electric current.

This machine is equipped with a power cord that has an equipment-grounding wire and a grounding plug (similar to the figure below). The plug must only be inserted into a matching receptacle (outlet) that is properly installed and grounded in accordance with all local codes and ordinances.

⚠WARNING

Serious injury could occur if you connect the machine to power before completing the setup process. DO NOT connect to power until instructed later in this manual.

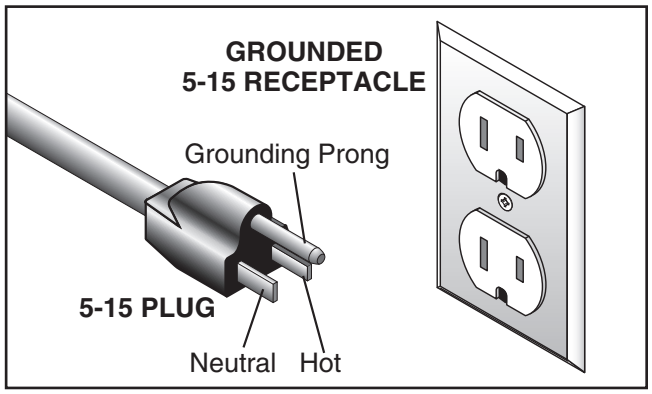
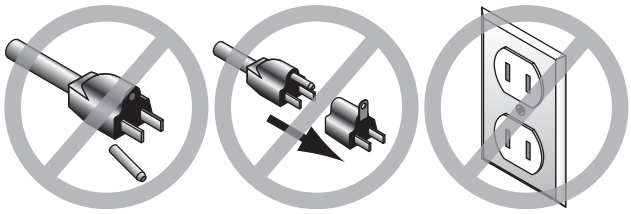


Figure 3. Typical 5-15 plug and receptacle.

⚠CAUTION



SHOCK HAZARD!

Two-prong outlets do not meet the grounding requirements for this machine. Do not modify or use an adapter on the plug provided—if it will not fit the outlet, have a qualified electrician install the proper outlet with a verified ground.

Improper connection of the equipment-grounding wire can result in a risk of electric shock. The wire with green insulation (with or without yellow stripes) is the equipment-grounding wire. If repair or replacement of the power cord or plug is necessary, do not connect the equipment-grounding wire to a live (current carrying) terminal.

Check with a qualified electrician or service personnel if you do not understand these grounding requirements, or if you are in doubt about whether the tool is properly grounded. If you ever notice that a cord or plug is damaged or worn, disconnect it from power, and immediately replace it with a new one.

Extension Cords

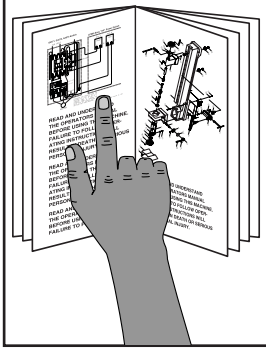
We do not recommend using an extension cord with this machine. If you must use an extension cord, only use it if absolutely necessary and only on a temporary basis.

Extension cords cause voltage drop, which may damage electrical components and shorten motor life. Voltage drop increases as the extension cord size gets longer and the gauge size gets smaller (higher gauge numbers indicate smaller sizes).

Any extension cord used with this machine must contain a ground wire, match the required plug and receptacle, and meet the following requirements:

Minimum Gauge Size .....16 AWG
Maximum Length (Shorter is Better).....50 ft.

SECTION 3: SETUP

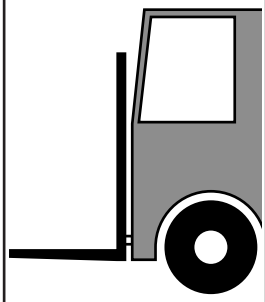


⚠WARNING

This machine presents serious injury hazards to untrained users. Read through this entire manual to become familiar with the controls and operations before starting the machine!

⚠WARNING

Wear safety glasses during the entire set up process!



⚠WARNING

The Model G0704 is a heavy machine. Serious personal injury may occur if safe moving methods are not used. To be safe, get assistance and use power equipment to move the shipping crate and remove the machine from the crate.

Needed for Setup

The following are needed to complete the setup process, but are not included with your machine:

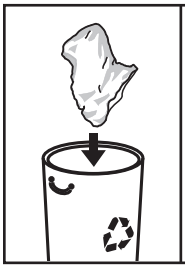
Description	Qty
• Precision Level	1
• Safety Glasses (for each person)	1
• Standard Screwdriver #3	1
• Solvent/Cleaner	1
• Shop Rags	1
• Metal Shim Stock	1
• Brass Hammer	1
• Lifting Strap (Rated for at least 500 lbs.)	1
• Lifting Equipment (Rated for at least 500 lbs.)	1
• An Assistant	1

Unpacking

Your machine was carefully packaged for safe transportation. Remove the packaging materials from around your machine and inspect it. If you discover any damage, *please call us immediately at (570) 546-9663 for advice.*

Save the containers and all packing materials for possible inspection by the carrier or its agent. *Otherwise, filing a freight claim can be difficult.*

When you are completely satisfied with the condition of your shipment, inventory the contents.



⚠WARNING

SUFFOCATION HAZARD!

Keep children and pets away from plastic bags or packing materials shipped with this machine. Discard immediately.

Inventory

The following is a list of items shipped with your machine. Before beginning setup, lay these items out and inventory them.

If any non-proprietary parts are missing (e.g. a nut or a washer), we will gladly replace them; or for the sake of expediency, replacements can be obtained at your local hardware store.

Contents		Qty
A.	Mill/Drill w/Stand	1
B.	Open End Combo Wrench 17/19	1
C.	Open End Combo Wrench 8/10	1
D.	Bottle for Oil	1
E.	Tool Box	1
F.	Large Handwheel Handle	1
G.	Small Handwheel Handles	3
H.	T-Bolts M10-1.5 x 60 (vise mounting)	2
	Flat Washers 10mm (vise mounting)	2
	Hex Nuts M10-1.5 (vise mounting)	2
I.	Drill Chuck	1
J.	Chuck Key	1
K.	Phillips Screwdriver	1
L.	Flat Screwdriver	1
M.	Arbor B16 x R8	1
N.	Hex Wrench Set 2, 3, 4, 5, & 6mm	1 ea.
O.	Spindle Pin	1

Not Shown:

	Hex Bolts M10-1.5 x 50	4
	Flat Washers 10mm	4

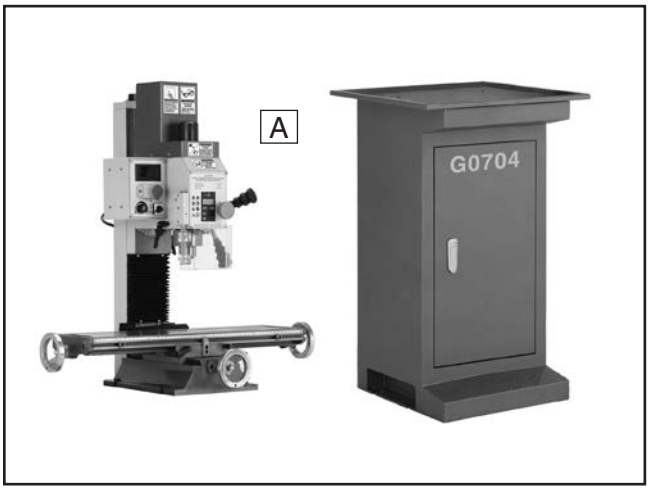


Figure 4. G0704 out of the crate.

NOTICE

If you cannot find an item on this list, carefully check around/inside the machine and packaging materials. Often, these items get lost in packaging materials while unpacking or they are pre-installed at the factory.

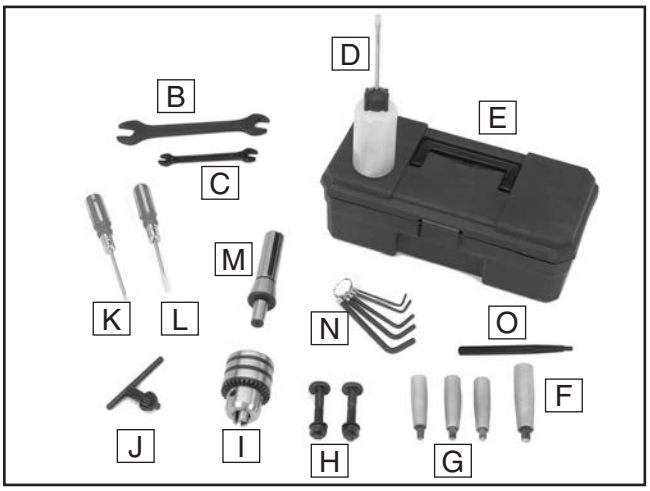


Figure 5. Inventory.

Cleanup

The unpainted surfaces of your machine are coated with a heavy-duty rust preventative that prevents corrosion during shipment and storage. This rust preventative works extremely well, but it will take a little time to clean.

Be patient and do a thorough job cleaning your machine. The time you spend doing this now will give you a better appreciation for the proper care of your machine's unpainted surfaces.

There are many ways to remove this rust preventative, but the following steps work well in a wide variety of situations. Always follow the manufacturer's instructions with any cleaning product you use and make sure you work in a well-ventilated area to minimize exposure to toxic fumes.

Before cleaning, gather the following:
- Disposable Rags
- Cleaner/degreaser (WD•40 works well)
- Safety glasses & disposable gloves
- Plastic paint scraper (optional)

Basic steps for removing rust preventative:

1. Put on safety glasses.

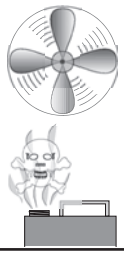
2. Coat the rust preventative with a liberal amount of cleaner/degreaser, then let it soak for 5–10 minutes.

3. Wipe off the surfaces. If your cleaner/degreaser is effective, the rust preventative will wipe off easily. If you have a plastic paint scraper, scrape off as much as you can first, then wipe off the rest with the rag.

4. Repeat **Steps 2–3** as necessary until clean, then coat all unpainted surfaces with a quality metal protectant to prevent rust.

⚠WARNING

Gasoline or products with low flash points can explode or cause fire if used to clean machinery. Avoid cleaning with these products.



⚠CAUTION

Many cleaning solvents are toxic if concentrated amounts are inhaled. Only work in a well-ventilated area.

NOTICE

Avoid chlorine-based solvents, such as acetone or brake parts cleaner, that may damage painted surfaces. Test all cleaners in an inconspicuous area before using to make sure they will not damage paint.

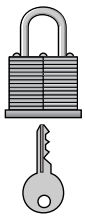
Site Considerations

Weight Load

Refer to the **Machine Data Sheet** for the weight of your machine. Make sure that the surface upon which the machine is placed will bear the weight of the machine, additional equipment that may be installed on the machine, and the heaviest workpiece that will be used. Additionally, consider the weight of the operator and any dynamic loading that may occur when operating the machine.

Space Allocation

Consider the largest size of workpiece that will be processed through this machine and provide enough space around the machine for adequate operator material handling or the installation of auxiliary equipment. With permanent installations, leave enough space around the machine to open or remove doors/covers as required by the maintenance and service described in this manual. **See below for required space allocation.**



⚠CAUTION

Children or untrained people may be seriously injured by this machine. Only install in an access restricted location.

Physical Environment

The physical environment where the machine is operated is important for safe operation and longevity of machine components. For best results, operate this machine in a dry environment that is free from excessive moisture, hazardous chemicals, airborne abrasives, or extreme conditions. Extreme conditions for this type of machinery are generally those where the ambient temperature range exceeds 41°–104°F; the relative humidity range exceeds 20–95% (non-condensing); or the environment is subject to vibration, shocks, or bumps.

Electrical Installation

Place this machine near an existing power source. Make sure all power cords are protected from traffic, material handling, moisture, chemicals, or other hazards. Make sure to leave access to a means of disconnecting the power source or engaging a lockout/tagout device, if required.

Lighting

Lighting around the machine must be adequate enough that operations can be performed safely. Shadows, glare, or strobe effects that may distract or impede the operator must be eliminated.

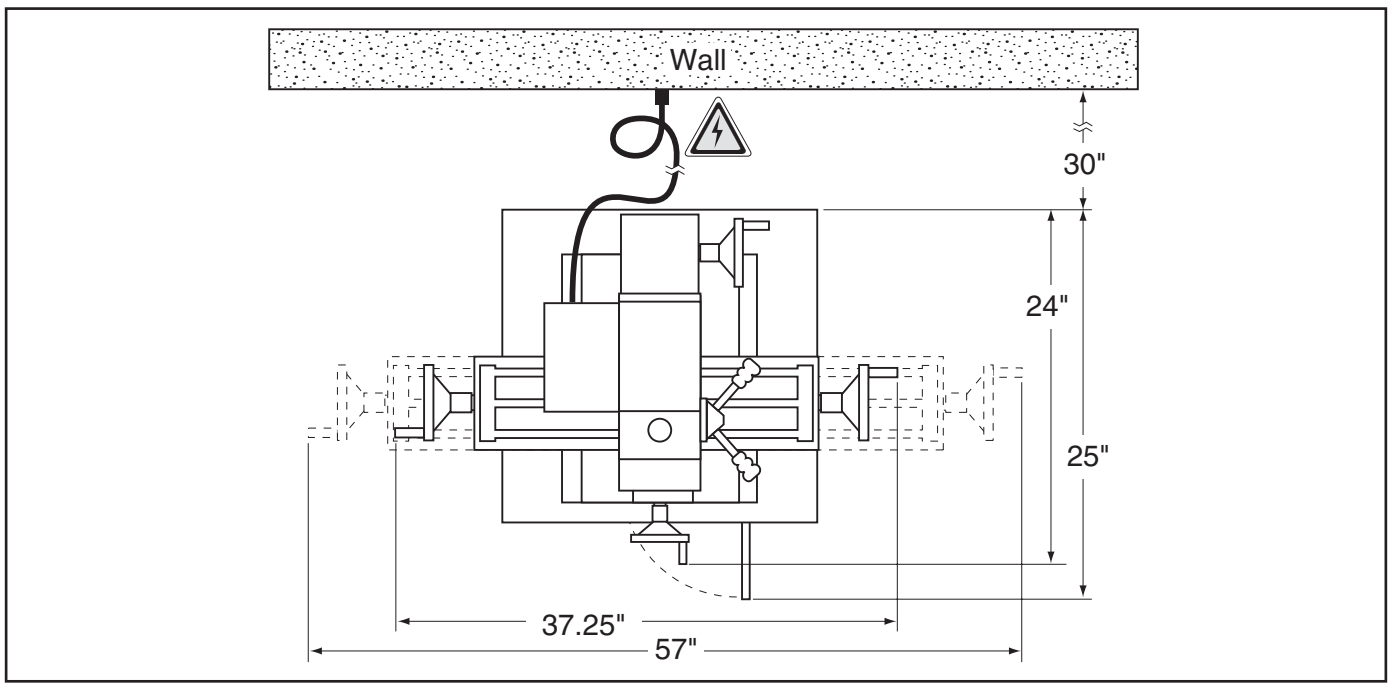
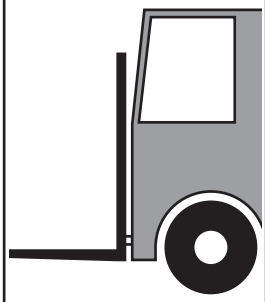


Figure 6. Space required for full machine range of motion.

Moving & Placing Machine



⚠WARNING

The Model G0704 is a heavy machine. Serious personal injury may occur if safe moving methods are not used. To be safe, get assistance and use power equipment to move the shipping crate and remove the machine from the crate.

To remove your machine from the shipping crate and place it in position:

1. Place the crate adjacent to the location where your machine will be placed, then remove the shipping crate from the pallet.

2. Position the stand into the desired location.

3. Use the vertical handwheel to raise the headstock as far as possible.

4. Hang a lifting strap from the fork of a forklift and place it under the head of the mill/drill, as shown in **Figure 7**. Take care not to place the straps over any controls that may be damaged during transit.

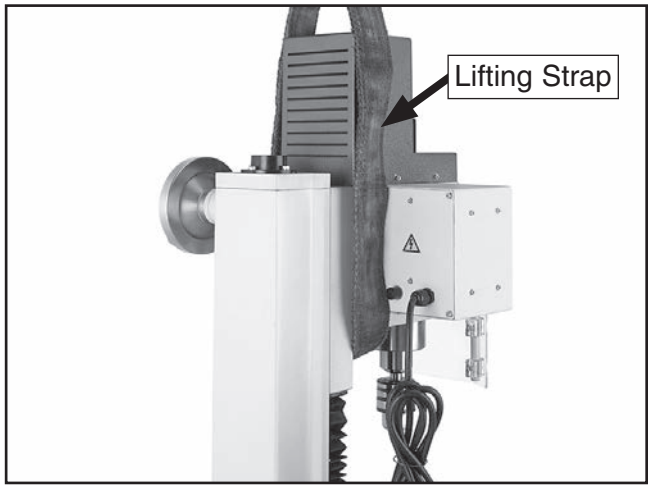


Figure 7. Lifting strap.

5. Unbolt the machine from the pallet, then with an assistant steadying the machine to prevent it from swinging, lift it slightly off of the pallet. Use the cross handwheel to move the table forward or backward as necessary to balance the machine so it hangs as close to level as possible.

6. Lift the machine and carefully place it onto the stand.

7. Bolt the machine to the stand with the four M10-1.25 x 50 hex bolts and flat washers.

   —If you are placing the machine on a workbench, it must be securely mounted to the workbench surface.

   The strongest mounting option is a "Through Mount" where holes are drilled all the way through the workbench, and hex bolts, washers, and hex nuts are used to secure the machine to the workbench.

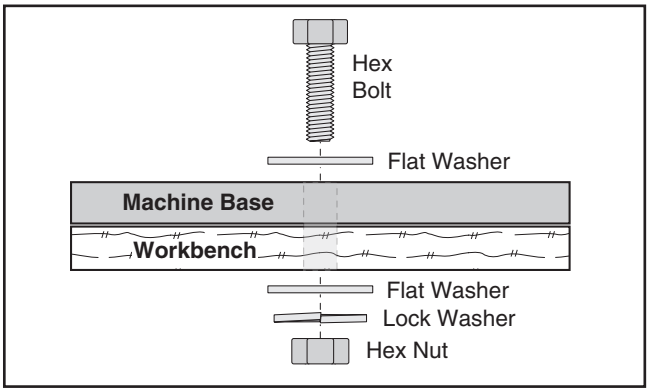


Figure 8. Example of a through mount setup.

Another option for mounting is a "Direct Mount" where the machine is simply secured to the workbench with a lag screw.

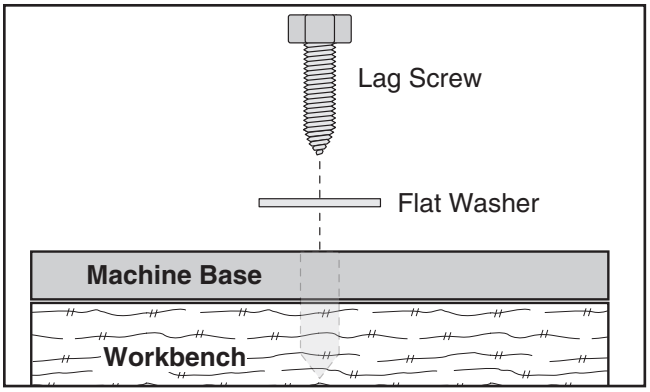


Figure 9. Example of a direct mount setup.

Mounting to Shop Floor

Although not required, we recommend that you mount your new machine cabinet to the floor. Because this is an optional step and floor materials may vary, floor mounting hardware is not included. Generally, you can either bolt the cabinet to the floor or mount it on machine mounts. Both options are described below. Whichever option you choose, it is necessary to level the cabinet with a precision level.

Bolting to Concrete Floors

Lag shield anchors with lag bolts and anchor studs (**Figure 10**) are two popular methods for anchoring an object to a concrete floor. We suggest you research the many options and methods for mounting your machine and choose the best that fits your specific application.

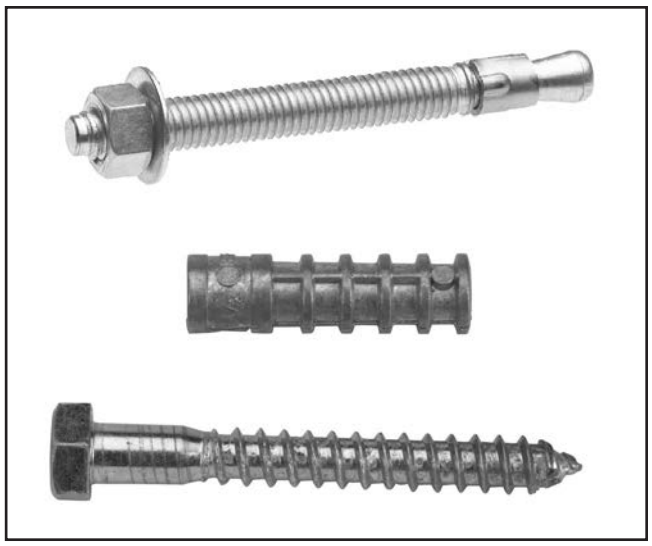


Figure 10. Typical fasteners for mounting to concrete floors.

NOTICE

Anchor studs are stronger and more permanent alternatives to lag shield anchors; however, they will stick out of the floor, which may cause a tripping hazard if you decide to move your machine.

Using Machine Mounts

Using machine mounts, shown in **Figure 11**, gives the advantage of fast leveling and vibration reduction. The large size of the foot pads distributes the weight of the machine to reduce strain on the floor.

Figure 11. Machine mount example.

NOTICE

We strongly recommend securing your machine to the floor if it is hardwired to the power source. Consult with your electrician to ensure compliance with local codes.

Assembly

Assembly of the Model G0704 consists of attaching the four handwheel handles to the machine.

To assemble your machine:

1. With a #3 standard screwdriver, install the large handwheel handle on the elevation handwheel (**Figure 12**).

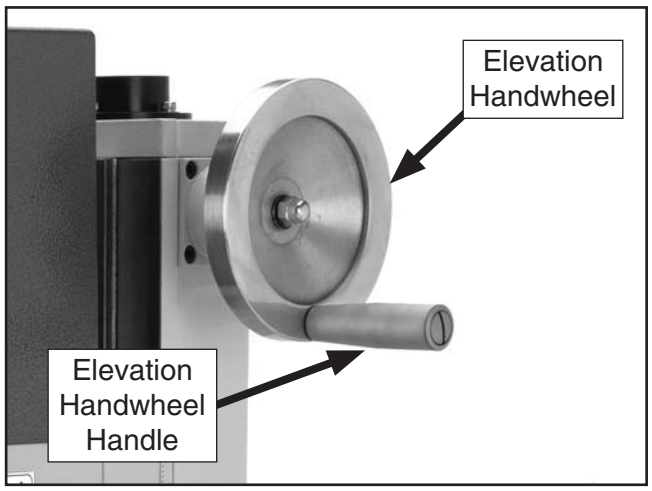


Figure 12. Elevation handwheel handle.

2. Use the same method to install the three small handwheel handles to the three table travel handwheels (**Figure 13**).

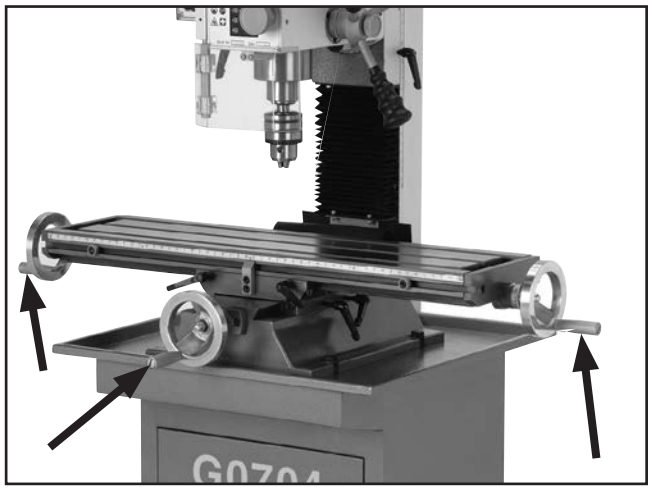


Figure 13. Table handwheel handles.

Drill Chuck Arbor

Your machine includes an B-16 drill chuck arbor and drill chuck. Before use, the drill chuck must be installed onto the arbor. The This drill chuck installation is intended to be semi-permanent.

Tip: *For a permanent installation, chill the arbor in the freezer for 15 minutes before performing the following procedure. The taper will expand as it returns to room temperature, permanently locking the chuck.*

To install the drill chuck onto the arbor:

1. Clean the grease off the drill chuck and all taper mating surfaces. Pay particular attention to the B-16 bore in the drill chuck—it must be free from all grease, oil, and debris.

2. Retract the drill chuck jaws fully by turning the body of the drill chuck counterclockwise.

3. Insert the arbor into the drill chuck. Tap the arbor lightly with a brass or other soft-headed hammer to get a good fit.

   Note: *While it may not seem like there is anything keeping the drill chuck in place, the* B-16 *Taper fit provides a strong bond and will hold the drill chuck tightly* (**Figure 14**).

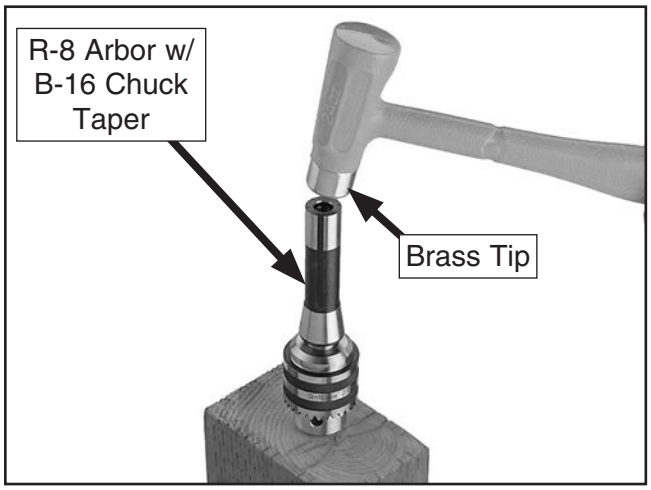


Figure 14. Drill chuck.

4. Refer to **Page 29** for detailed instructions for installing or removing the drill chuck and arbor in the spindle.

Test Run

Once assembly is complete, test run the machine to ensure it is properly connected to power and safety components are functioning properly.

If you find an unusual problem during the test run, immediately stop the machine, disconnect it from power, and fix the problem BEFORE operating the machine again. The **Troubleshooting** table in the **SERVICE** section of this manual can help.

The test run consists of verifying the following: 1) The motor powers up and runs correctly, and 2) the Emergency Stop button stops spindle rotation.

⚠WARNING

Serious injury or death can result from using this machine BEFORE understanding its controls and related safety information. DO NOT operate, or allow others to operate, machine until the information is understood.

⚠WARNING

DO NOT start machine until all preceding setup instructions have been performed. Operating an improperly set up machine may result in malfunction or unexpected results that can lead to serious injury, death, or machine/property damage.

To test run machine:

1. Clear all setup tools away from the machine.

2. Make sure the machine is properly lubricated (see **Page 36**).

3. Make sure there are no obstructions around or underneath the spindle.

4. Place the spindle direction selection knob in the "0" (OFF) position and press the Emergency Stop button (see **Figure 15**).

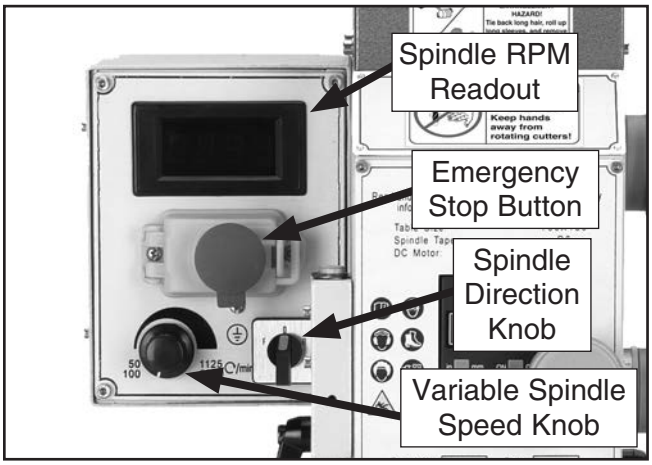


Figure 15. Test run controls.

5. Connect the mill/drill to the power source**.**

6. Turn the speed range selector knob to the "L" (low) position (see **Figure 1** on **Page 3**) and rotate the variable spindle speed knob all the way to the left (slowest) position.

7. Place the spindle direction knob in the "F" (Forward) position. Squeeze the tab on the Emergency Stop button, pull it open, then press the green button. The spindle will begin to turn at a low RPM.

—When operating correctly, the machine runs smoothly with little or no vibration or rubbing noises.

—Investigate and correct strange or unusual noises or vibrations before operating the machine further. Always disconnect the machine from power when investigating or correcting potential problems.

8. Press the Emergency Stop button. The machine should stop.

—If the machine *does* stop, the Emergency Stop button safety feature is working correctly. Continue to **Step 8**.

—If the machine *does not* stop, the Emergency Stop button safety feature is not working correctly. This safety feature must work properly before proceeding with regular operations. Call Tech Support for help.

Congratulations! The test run is complete. Perform the following **Spindle Break-In** procedure.

Spindle Break-In

The spindle break-in procedure distributes lubrication throughout the bearings to reduce the risk of early bearing failure if there are any "dry" spots or areas where lubrication has settled in the bearings. You ***must*** complete this procedure ***before*** placing operational loads on the spindle for the first time when the machine is new or if it has been sitting idle for longer than 6 months.

Always start the spindle break-in at the lowest speed to minimize wear if there *are* dry spots. Allow the spindle to run long enough to warm up and distribute the bearing grease, then incrementally increase spindle speeds and repeat this process at each speed until reaching the maximum spindle speed. Following the break-in procedure in this progressive manner helps minimize any potential wear that could occur before lubrication is fully distributed.

NOTICE

Complete the spindle bearing break-in procedure to prevent rapid wear and tear of spindle components once the machine is placed into operation.

NOTICE

DO NOT perform this procedure independently of the Test Run section. The machine could be seriously damaged if the controls are set differently than instructed in that section.

To perform spindle break-in process:

1. Successfully complete **Test Run** procedure beginning on **Page 20**.
2. Open the Emergency Stop button cover and press the green button to start the spindle.
3. With the speed range selector knob in the "L" (low) position, turn mill/drill ***ON*** and run the spindle at 600 RPM for a minimum of 10 minutes in each direction of rotation.
4. Turn the mill/drill ***OFF***.
5. With the speed range selector knob in the "H" (high) position, turn mill/drill ***ON*** and run spindle at 1000 RPM for 5 minutes in each direction of rotation.
6. Repeat **Step 5** at 2000 RPM.
7. Turn the mill/drill ***OFF***.

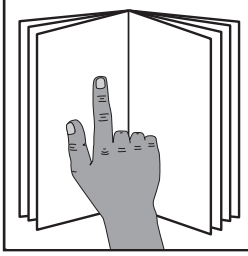
Congratulations! The spindle break-in is complete.

SECTION 4: OPERATIONS

Operation Overview

The purpose of this overview is to provide the novice machine operator with a basic understanding of how the machine is used during operation, so the machine controls/components discussed later in this manual are easier to understand.

Due to the generic nature of this overview, it is **not** intended to be an instructional guide. To learn more about specific operations, read this entire manual and seek additional training from experienced machine operators, and do additional research outside of this manual by reading "how-to" books, trade magazines, or websites.

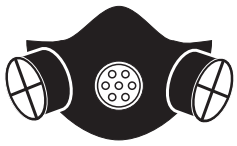


WARNING

To reduce the risk of serious injury when using this machine, read and understand this entire manual before operating.

WARNING

Damage to your eyes and lungs could result from using this machine without proper protective gear. Always wear safety glasses and a respirator when operating this machine.



NOTICE

If you have never used this type of machine or equipment before, WE STRONGLY RECOMMEND that you read books, review industry trade magazines, or get formal training before beginning any projects. Regardless of the content in this section, Grizzly Industrial will not be held liable for accidents caused by lack of training.

To complete a typical operation, the operator does the following:

1. Loosens the vertical travel locks, then adjusts the headstock height above the table to ensure there is sufficient room to install the tooling in the spindle and the workpiece on the table.

2. Installs the desired tooling for the job.

3. Positions the workpiece as needed for the operation, then clamps the workpiece using applicable clamping devices, or a vise that is already mounted on the table to ensure the workpiece does not move during the milling/drilling operation.

4. Positions the cutter or drill bit near the workpiece, then tightens vertical travel locks.

5. Selects the appropriate spindle speed for the milling or drilling operation using the speed selector knob and variable spindle speed knob.

6. Unlocks the X- and Y-axis table locks.

7. Wears safety glasses or a face shield.

8. Turns the spindle direction selection knob to the desired direction.

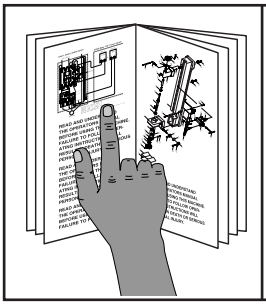
9. Loosens the quill lock lever and uses the quill feed lever or the fine feed knob to set the cutting tool height according to the workpiece.

10. For milling operations, uses the table handwheels to move the table so the cutter removes material evenly from the workpiece.

    For drilling operations, uses the quill feed lever or fine feed knob to lower the drill bit into the workpiece, then raises the drill bit out of the workpiece using the same controls.

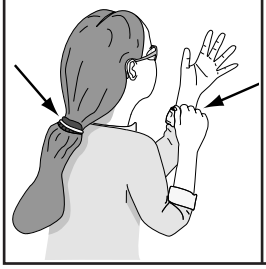
11. Turns the spindle direction knob to the "0" position to stop the spindle.

Basic Controls



⚠WARNING

To reduce the risk of serious injury when using this machine, read and understand this entire manual before beginning any operations.



⚠WARNING

Loose hair, clothing, or jewelry could get caught in machinery and cause serious personal injury. Keep these items away from moving parts at all times to reduce this risk.

Use the descriptions and figures below to become familiar with the basic controls of your machine.

Vertical Handwheel: Raises and lowers the headstock (Z-Axis).

Speed Range Selector Knob: Selects low range (L) or high range (H) for the spindle speed.

Vertical Travel Locks: Lock the position of the headstock to the column.

Fine Feed Lock Knob: Engages the fine feed knob for precise control of vertical quill travel.

Fine Feed Knob: Provides fine control over vertical quill travel.

Quill Feed Levers: Provide coarse control over vertical quill travel.

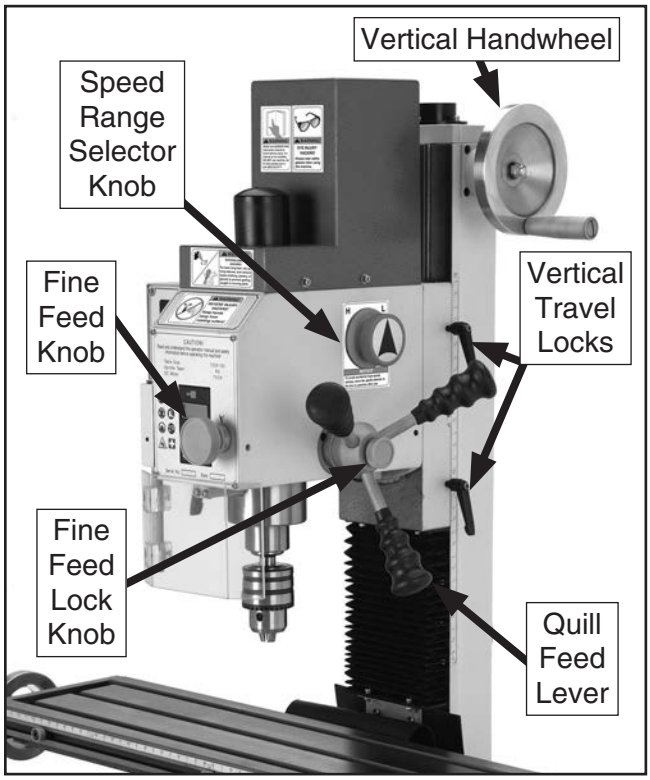


Figure 16. Head controls.

Drawbar Cap: Covers the drawbar and upper portion of the spindle.

Drawbar: Secures collets and tooling in the spindle taper.

Spindle and Chuck: Provide a mounting place for tooling.

Quill Lock Lever: Locks the vertical position of the quill when tightened.

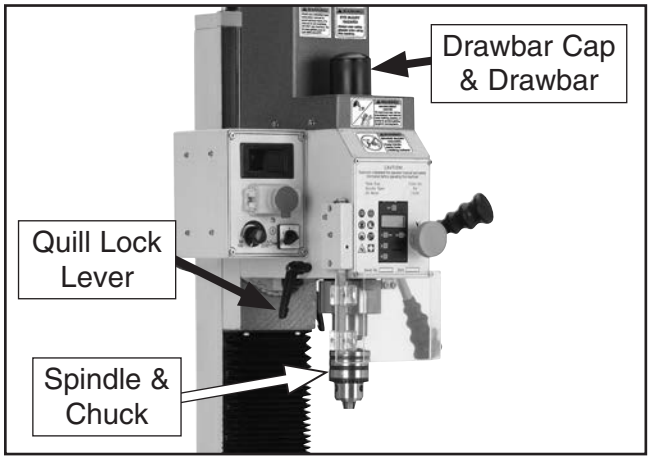


Figure 17. Headstock controls (continued).

Cross Handwheel: Moves the table forward and backward (Y-Axis).

Longitudinal Handwheels: Move the table from side to side (X-Axis).

Longitudinal Table Locks: Lock the longitudinal position of the table when tightened.

Cross Table Locks: Lock the cross position of the table when tightened.

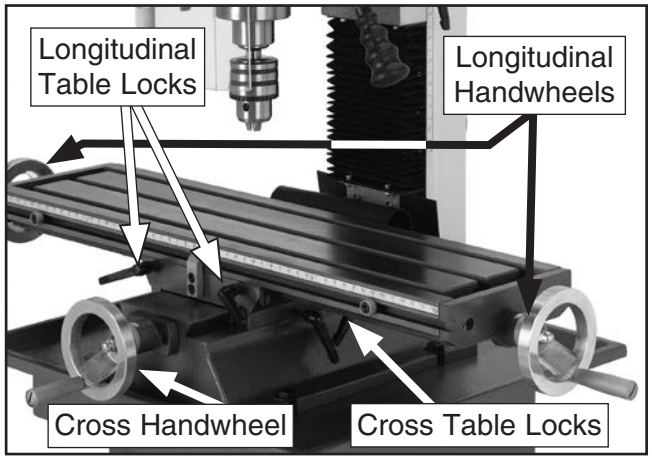


Figure 18. Table controls.

Spindle RPM Readout: Displays the speed of the spindle rotation.

Emergency Stop Button: Interrupts the flow of power to the machine.

Variable Spindle Speed Knob: Changes the speed of the spindle rotation.

Spindle Direction Selection Knob: Changes the direction of spindle rotation.

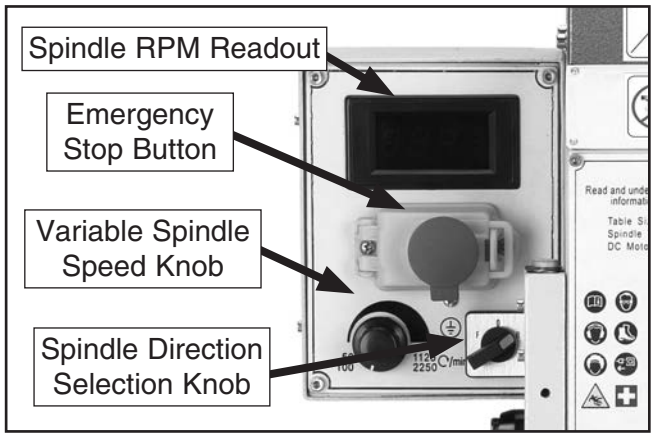


Figure 19. Control panel.

Power Button: Turns display ***ON/OFF***.

ZERO Button: Resets the display to 0.000". Hold down until "S" flashes on the readout to enable ▲ or ▼ buttons.

IN/MM Button: Toggles the units displayed.

▲ **Button:** Increases the current depth reading.

▼ **Button:** Decreases the current depth reading.

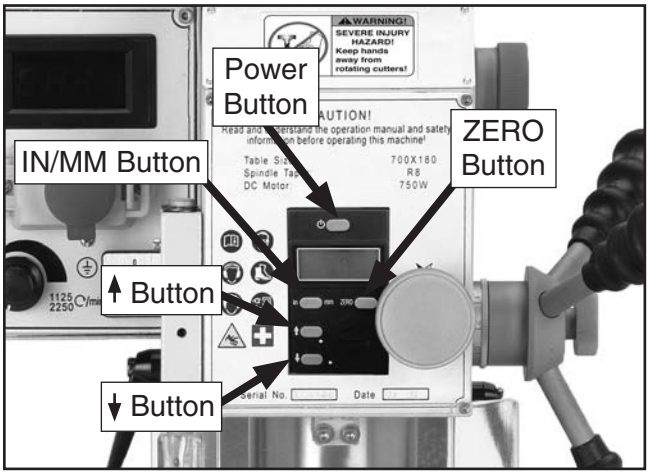


Figure 20. Digital readout unit controls.

Digital Readout Unit

The digital readout unit gives a precise reading of the vertical positioning of the quill. It can be zeroed at any position and manually increased or decreased independent of quill position when the operation requires it (see **Figure 21**).

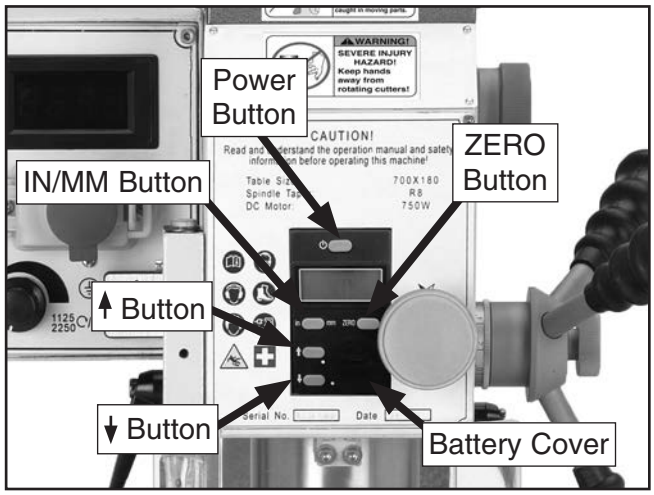


Figure 21. Digital readout controls.

To use the digital readout:

1. Press the power button (see **Figure 21**). A reading should appear on the display.

2. Press the IN/MM button to select whether units will be displayed in inches or millimeters. Each press of the button switches from one unit to the other.

3. If you want to "zero" the readout at any time, press the ZERO button. The current reading will be cleared and the scale will be reset to 0.000.

   If you want to increase or decrease the reading at any time, press the ZERO button and hold it until "S" flashes on the display. Press the appropriate ▲ or ▼ button, then press the ZERO button again. This is useful when calibrating the mill to known dimensions on a workpiece.

4. Press the ZERO button and hold until "S" flashes, press the ▲ or ▼ button until the display reads 0.000, then press the ZERO button.

5. When the operation is complete, press the power button to conserve the battery.

Calculating Spindle Speed

Closely follow the proper spindle speed and proper feed rate to produce good results, reduce undue strain on all moving parts and increase operator safety.

Prior to milling, determine the spindle speed needed to cut your workpiece, then set the speed on the machine.

To determine the needed spindle speed:

1. Use the table in **Figure 22** to determine the cutting speed required for the material of your workpiece.

2. Measure the diameter of your cutting tool in inches.

3. Use the following formula to determine the needed spindle RPM for your operation:

   (Cutting Speed x 4) /Tool Diameter = RPM

Cutting Speeds for High Speed Steel (HSS) Cutting Tools	
Workpiece Material	Cutting Speed (sfm)
Aluminum & Alloys	300
Brass & Bronze	150
Copper	100
Cast Iron, soft	80
Cast Iron, hard	50
Mild Steel	90
Cast Steel	80
Alloy Steel, hard	40
Tool Steel	50
Stainless Steel	60
Titanium	50
Plastics	300-800
Wood	300-500
Note: For carbide cutting tools, double the cutting speed. These values are a guideline only. Refer to the *MACHINERY'S HANDBOOK* for more detailed information.	

Figure 22. Cutting speed table for HSS cutting tools.

Spindle Speed and Direction

Setting the speed on the Model G0704 is a two part process. The gearbox in the headstock has two gear ranges and the motor is a variable speed unit. Together, these two systems provide an overall speed range of 50–2250 RPM.

When the dial is turned up all the way, the motor draws the full amperage level. When combined with a cutting load, the motor can overheat and become damaged. If high speeds are needed, put the speed range into high "H" then turn the variable speed dial down, away from the maximum position. If the maximum RPM is needed, reduce the cutting load as much as possible and minimize the operation time at these speeds.

To set the spindle speed:

1. Determine the appropriate spindle speed for your operation. See **Calculating Spindle Speed** on **Page 26**.

2. Select the appropriate speed range using the speed range selector knob (see **Figure 23**). "H" represents the high speed range, which is capable of spindle speeds from 100–2250 RPM. "L" represents the low range, which is capable of spindle speeds from 50–1125 RPM.

   Note: *To maximize spindle torque, use the low range.*

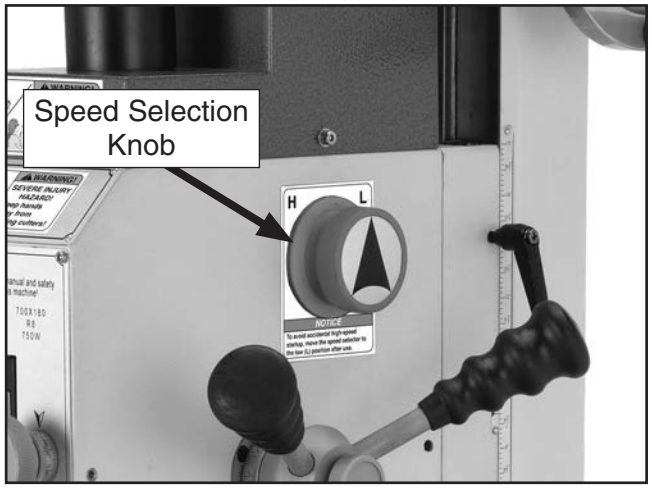


Figure 23. Speed selector knob.

   Note: *It may be necessary to rotate the spindle by hand to get the gears to mesh properly.*

3. Make sure the work area is clear and that all safety precautions are taken.

4. Turn the variable spindle speed knob to the far left (slowest) position, then press the green start button and use the spindle direction selection knob to choose the direction of spindle travel and start spindle rotation (**Figure 24**).

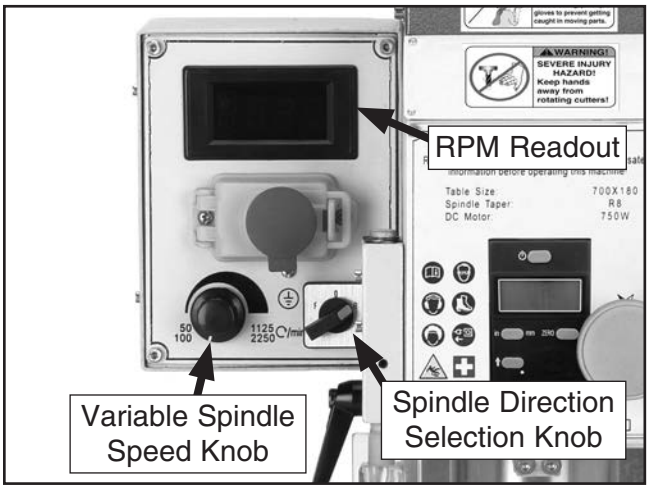


Figure 24. Spindle direction selection knob.

5. Watch the RPM readout and adjust the variable spindle speed knob as needed until the desired RPM is reached.

NOTICE

AVOID OVERHEATING MOTOR!

DO NOT operate with variable speed dial at full RPM for than a couple minutes or motor overheating may occur. Instead, achieve the same spindle speed by using the high "H" speed range and reducing the motor RPM by turning the variable speed dial down.

Spindle Height Controls

The spindle height is controlled by the quill feed lever and the fine feed knob.

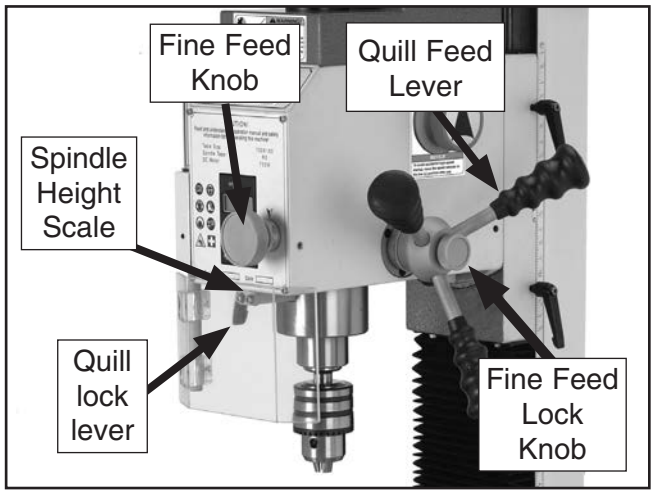


Figure 25. Spindle controls.

Changing Spindle Position Using Quill Feed Levers

1. Unlock the quill lock lever and loosen the fine feed lock knob.

2. Pull down on any of the coarse downfeed levers to adjust the vertical position of the spindle. Observe the spindle height scale or digital readout to monitor movement in inches or millimeters.

Tip: *Milling with the spindle fully extended can cause tool chatter. For maximum spindle rigidity when milling, it is better to keep the spindle retracted into the headstock as far as possible with the spindle lock and the downfeed selector knob tightened.*

Changing Spindle Position Using Fine Feed Knob

1. Unlock the quill lock lever and tighten the fine feed lock knob.

2. Rotate the fine feed knob to lower or raise the spindle in small increments. Observe the scale on the knob or the digital readout to monitor movement in thousandths of an inch (**Figure 26**).

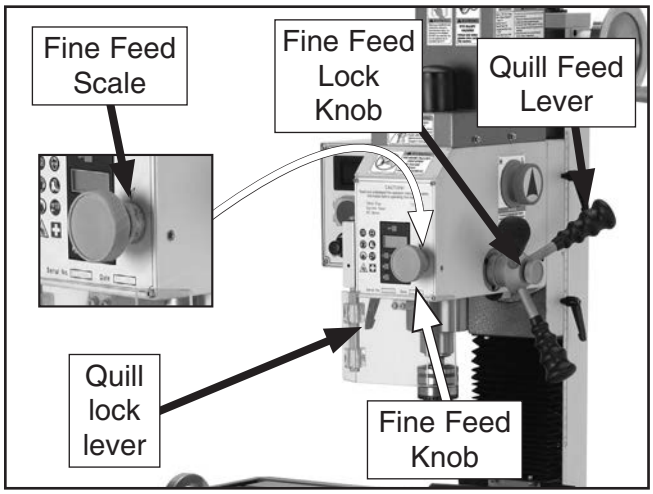


Figure 26. Fine spindle feed controls.

3. Tighten the quill lock lever to hold the spindle in a particular position if you choose.

   Tip: *Milling with the spindle fully extended can cause tool chatter. For maximum spindle rigidity when milling, it is better to keep the spindle retracted into the headstock as far as possible with the quill lock lever tightened, and the fine feed knob tightened.*

Drill Chuck

To install the drill chuck and arbor:

1. DISCONNECT MILL/DRILL FROM POWER!

2. Remove the drawbar cap.

3. Insert the chuck arbor into the spindle, making sure to line up the slot in the arbor with the pin in the spindle.

4. Thread the drawbar into the arbor until the arbor is seated up into the spindle taper.

5. Use the included spindle pin to prevent the spindle from turning while you use an 8mm wrench to tighten the drawbar.

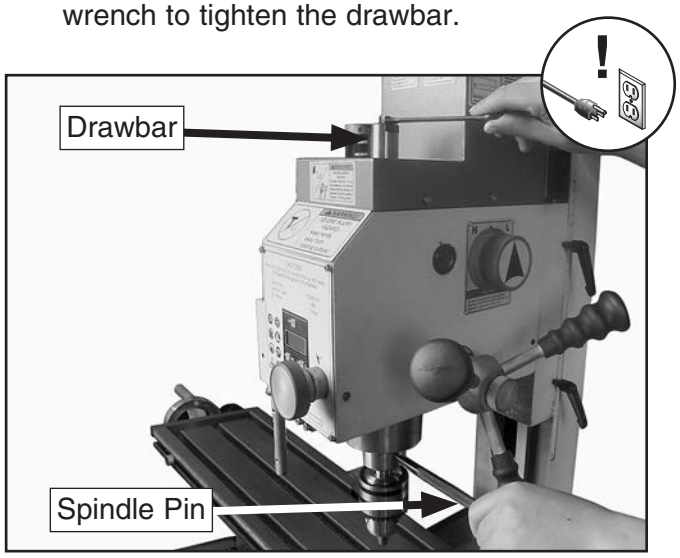


Figure 27. Tightening the drawbar.

Note: *Do not overtighten the drawbar. Overtightening makes arbor removal difficult and will damage the arbor and threads.*

6. Re-install the drawbar cap.

NOTICE

The Model G0704 drawbar will extract the arbor from the spindle. Once the arbor or collet has broken free from the spindle taper, be sure to properly support it while continuing to loosen the drawbar. Failure to properly support the arbor or collet while loosening the drawbar will result in the arbor or collet falling out of the spindle, causing damage to machine components.

To remove the chuck and arbor from the spindle:

1. DISCONNECT MILL/DRILL FROM POWER!

2. Remove the drawbar cap.

3. Lock the quill in place with the quill lock lever.

4. Use the included spindle pin to prevent the spindle from turning while you use an 8mm wrench to loosen the drawbar 2–3 turns. DO NOT continue loosening the drawbar without supporting the drill chuck or it will fall from the spindle.

5. Hold the chuck with one hand and finish loosening the drawbar until the chuck falls out of the spindle.

   Note: *The chuck is attached to the arbor using a B-16 taper. This attachment is considered to be semi-permanent. There should be no need to remove the chuck from the arbor.*

Loading Tooling

Your Model G0704 features an R-8 spindle taper, which gives the freedom to use standard R-8 cutting tools and collets. These optional collets come in many sizes, typically ranging from 1/16" to 7/8" and 3mm to 20mm, and should be matched to your cutting tool shank size.

To install the tooling:

1. DISCONNECT MILL/DRILL FROM POWER!
2. Remove the drawbar cap.
3. Carefully clean the surface of the tooling and spindle taper. Ensure that it is free of debris and is lightly oiled.
4. If you are using a cutting tool and collet, insert the cutting tool into the collet, then insert the collet up into the spindle taper, making sure the slot in the collet lines up with the pin in the spindle.

   If you are using a cutting tool that installs directly into the spindle, insert the tool into the spindle taper, making sure the slot in the tool lines up with the pin in the spindle.
5. Slide the tooling upward until it makes contact with the drawbar threads.
6. Hand thread the drawbar into the tooling until the tooling draws up into the spindle taper.
7. Use the included spindle pin to prevent the spindle from turning while you use an 8mm wrench to tighten the drawbar.

   Note: *Do not overtighten the drawbar. Overtightening makes collet removal difficult and will damage the drawbar threads, collet, and the spindle taper. Keep in mind that the taper keeps the collet and tool in place. The drawbar simply aids in seating the taper.*

To remove the collet:

1. DISCONNECT MILL/DRILL FROM POWER!
2. Remove the drawbar cap.
3. Lock the quill in place with the quill lock lever.
4. Use the included spindle pin to prevent the spindle from turning while you use an 8mm wrench to loosen the drawbar 2–3 turns. DO NOT continue loosening the drawbar without supporting the collet or it will fall from the spindle.

⚠CAUTION

LACERATION HAZARD! Leading edges of end mills and other cutting tools can be very sharp. Protect your hands with gloves or a shop towel when handling.

NOTICE

The Model G0704 drawbar will extract the arbor from the spindle. Once the arbor or collet has broken free from the spindle taper, be sure to properly support it while continuing to loosen the drawbar. Failure to properly support the arbor or collet while loosening the drawbar will result in the arbor or collet falling out of the spindle, causing damage to machine components.

5. Protect the table surface with a piece of cardboard and hold the cutter/tool with a shop towel to prevent it from falling out of the collet. Continue loosening the drawbar until the collet is freed from the spindle.

Headstock Travel (Z-Axis and Rotation)

Headstock height is adjustable in the vertical Z-axis to accept large workpieces. For unique milling operations, the headstock can be tilted right or left between 0° and 90°.

To raise or lower the headstock:

1. Unlock the vertical travel lock levers shown in **Figure 28**.

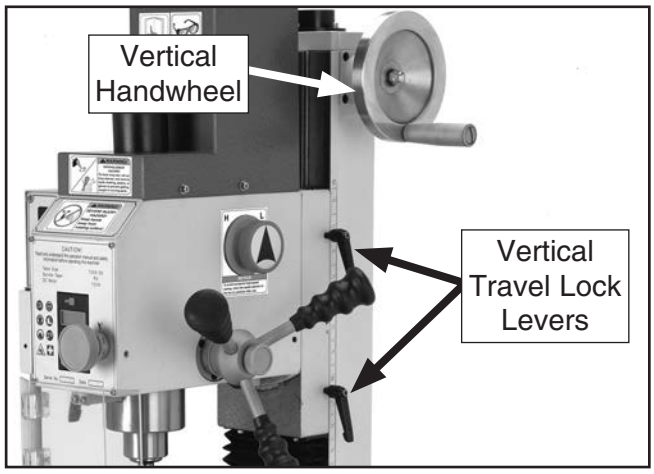


Figure 28. Headstock slide controls.

2. Turn the vertical handwheel shown in **Figure 28** to raise or lower the headstock, then lock the vertical travel lock levers.

   Note: *For maximum spindle rigidity when milling, keep the spindle retracted into the headstock as far as possible with the quill lock lever locked and with the fine feed lock knob tightened.*

To tilt the headstock to the left or right:

1. DISCONNECT MILL/DRILL FROM POWER.

⚠CAUTION

During the following steps, be aware that the headstock is top-heavy and will swing if it is not well supported once the center bolt and lock nut are loosened. Always support the headstock with one hand when loosening these fasteners. Failure to do so may result in unexpected movement of the headstock, causing damage to the machine and personal injury.

2. Support the headstock with one hand, then using the included 17/19mm combo wrench, loosen the headstock center bolt and three angle lock nuts (**Figure 29**).

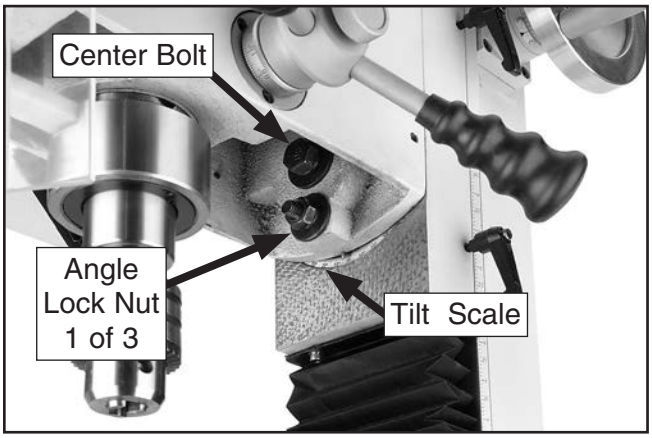


Figure 29. Headstock tilt controls.

3. While watching the tilt scale, rotate the headstock to the required angle, then retighten the center bolt and angle lock nut to hold the headstock in place.

Table Travel

The mill/drill table can be moved in the longitudinal (X-axis) and cross (Y-axis) directions.

Longitudinal Feed
The X-axis is moved by the handwheels shown in **Figure 30** at the end of the table. These handwheels will move the table in both directions side-to-side. One complete revolution of either handwheel moves the longitudinal feed 0.100". There is also a scale on the front of the table for use when a tight tolerance is not required. The longitudinal feed can be locked in position by table locks located on the front of the table (see **Figure 31**).

Cross Feed
The Y-axis shown in **Figure 30**, is moved with the handwheel on the front of the table base. One complete revolution of the handwheel moves the cross slide 0.100". The cross feed can be locked into position by a table lock lever located on the right side of the cross slide underneath the table (see **Figure 31**).

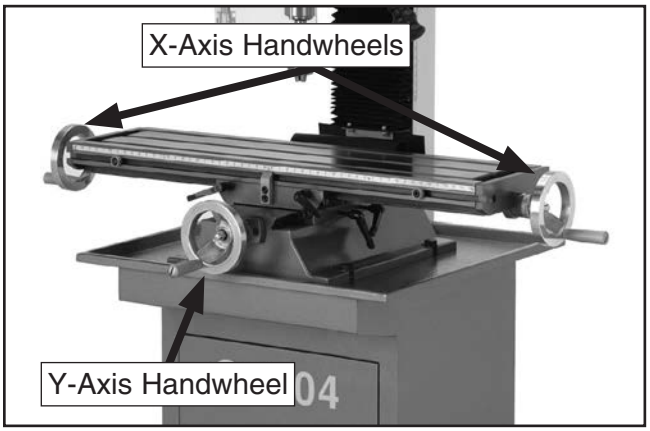


Figure 30. Table X- and Y-axis controls.

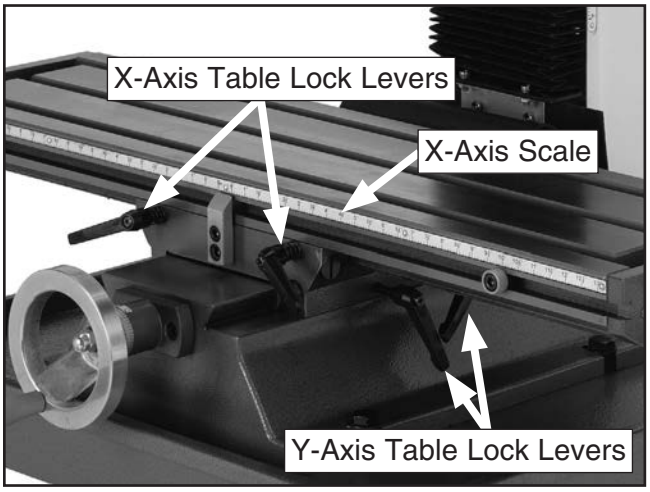


Figure 31. Table locks and scales.

SECTION 5: ACCESSORIES

⚠WARNING

Installing unapproved accessories may cause machine to malfunction, resulting in serious personal injury or machine damage. To reduce this risk, only install accessories recommended for this machine by Grizzly.

NOTICE

Refer to our website or latest catalog for additional recommended accessories.

H8179—Horizontal Milling Table

Take advantage of the G0704 mill/drill 90° tilting headstock feature. Install this lifted cast-iron horizontal milling table for the correct clearance when making those side-milling operations.

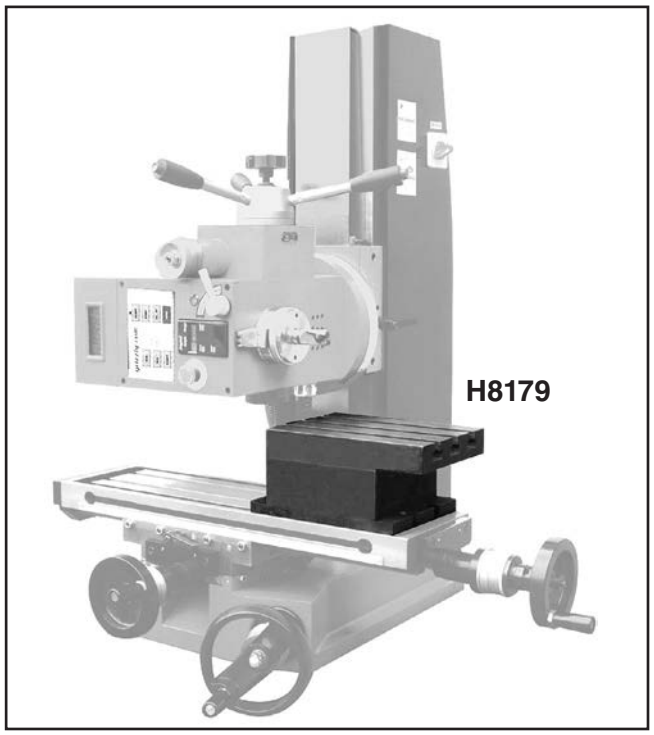


Figure 32. Horizontal milling worktable.

H8177—Worktable with Angle

Enjoy having an economical way to support your workpiece at an array of angles. This high-quality tilting worktable is quick and easy to setup and use.

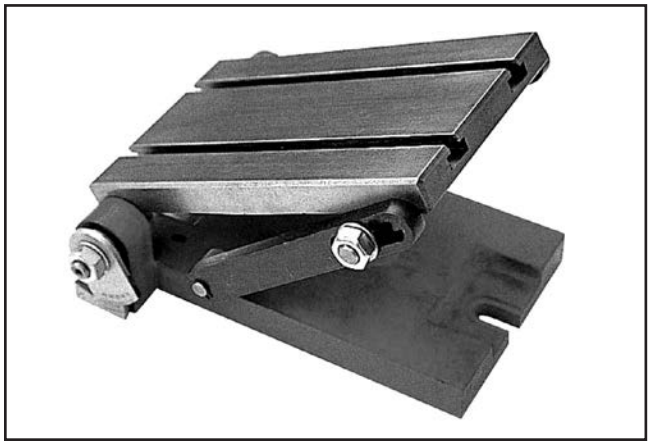


Figure 33. Worktable with angle.

G5684—R-8 Vertical Collet Rack

No more loose R-8 collets laying around in your tool box. Organize with this handy collet rack and you won't be looking at each one for the correct size. Set on your bench or mount to a wall. Holds 48 collets.

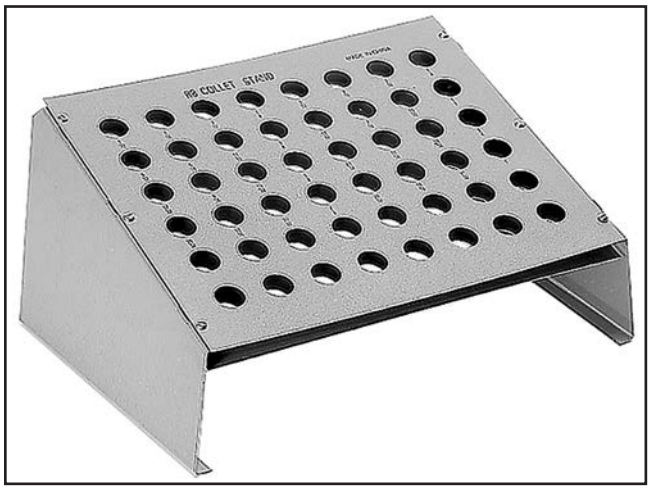


Figure 34. Model G5684 Tilt Table.

G9322—Boring Head Combo Set
Hardened and ground adjusting screws along with a wide base design guarantee a long life and trouble-free use. Includes a 2" boring head, R-8 arbor with 7/16"-20 TPI, and a 12 piece 3/4" boring bar set.

Figure 35. G9324 Boring Head Combo Set.

G9760—20-PC. 2 & 4 Flute TiN End Mill Set.
Includes these sizes and styles in two and four flute styles: 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 3/8", 11/16", and 3/4".

Figure 36. G9760 20-PC End Mill Set.

D2260A—Mini Shop Fox® Mobile Base
Don't let the little size of this one fool you. It shares the same design concepts as its two bigger brothers, giving you an amazing 600 lb. load capacity in one small package!

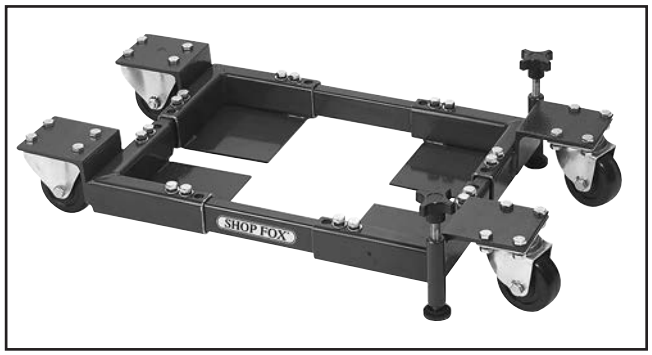


Figure 37. Model D2260A Mini Shop Fox® Mobile Base.

H5685—4" Rotary Table
The perfect rotary table for all you model makers and those doing smaller precision work. Comes with clamping kit.

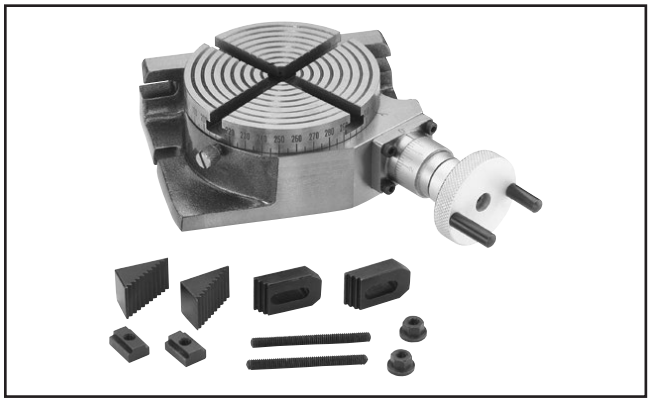


Figure 38. H5685 4" Rotary Table.

Basic Eye Protection

T20501—Face Shield Crown Protector 4"
T20502—Face Shield Crown Protector 7"
T20503—Face Shield Window
T20451—"Kirova" Clear Safety Glasses
T20452—"Kirova" Anti-Reflective S. Glasses
H7194—Bifocal Safety Glasses 1.5
H7195—Bifocal Safety Glasses 2.0
H7196—Bifocal Safety Glasses 2.5

Figure 39. Assortment of basic eye protection.

order online at www.grizzly.com or call 1-800-523-4777

G9512—T-Slot Nuts, 4 PK, 1/2" Slot, 3/8"-16
Heat treated steel T-Slot Nuts with black oxide finish feature an imperfect thread in the base of the T-nut to eliminate any danger of screwing the clamping stud through and damaging the table slot.

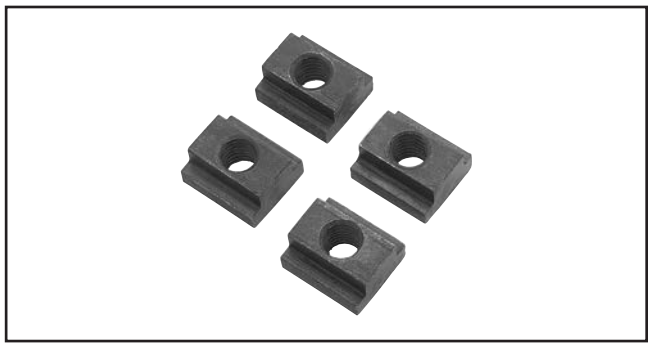


Figure 40. Model G9512 T-Slot Nuts.

G5758—Tilt Table 5" x 7"
Set your work at any angle with these sturdy tilt tables. Heavy-duty construction includes T-slots, two locking screws and precision base that allows the table to tilt from -45 Degrees to +45 Degrees. Table size: 5" x 7".

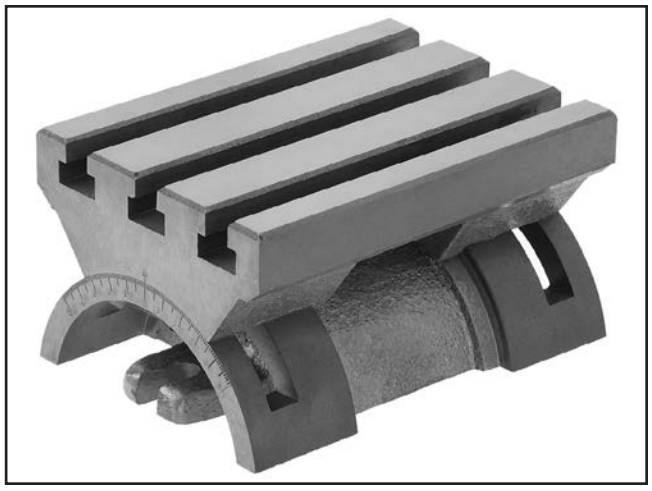


Figure 41. Model G5758 Tilt Table.

G9849—Magnetic Base/Dial Indicator Combo
Precision measurements and setups have never been so easy. Magnetic base engages with just the turn of a switch and allows pinpoint adjustment. The dial indicator features 0-1" travel and has a resolution of 0.001". This fine set includes a molded case for protection and convenience.

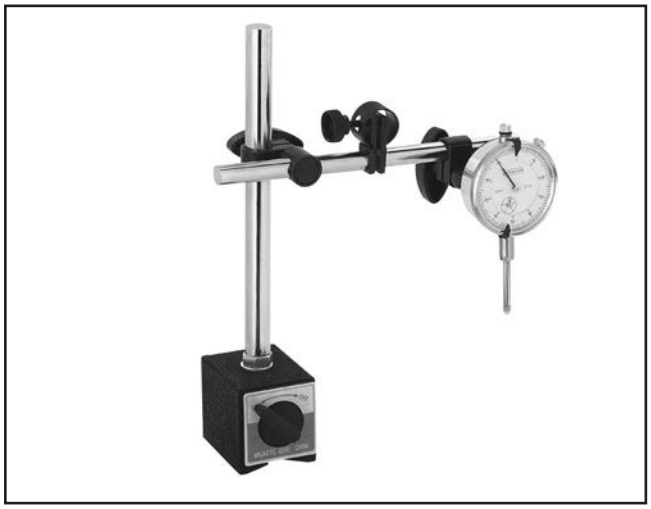
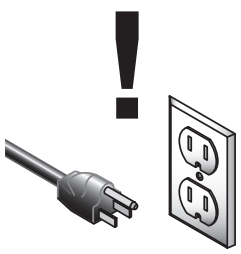


Figure 42. Model G9849 Indicator/Base Combo

SB1365—South Bend Way Oil-ISO 68, 12 oz.
T23964—Moly-D Multi-purpose NLGI#2 Grease

Figure 43. Recommended products for machine lubrication.

SECTION 6: MAINTENANCE



⚠WARNING

Always disconnect power to the machine before performing maintenance. Failure to do this may result in serious personal injury.

Schedule

For optimum performance from your machine, follow this maintenance schedule and refer to any specific instructions given in this section.

Daily Check:
- Make sure mill/drill is disconnected from power when not in use.
- Check for loose mounting bolts.
- Make sure mill/drill is clean and lubricated.
- Check for worn or damaged wires.
- Check for any other unsafe condition.

Monthly Check:
- Check that gibs are adjusted properly.

Biannual Check:
- Lubricate headstock lead screw and gears.

Lubrication

Regular lubrication will ensure your mill/drill performs at its highest potential. Regularly wipe all sliding surfaces with SB1365 Way Oil (**Page 35**) or a light machine oil, then move the components back and forth several times to ensure smooth movements (**Figures 44–46**). Every six months, or more often with heavy use, clean and lubricate the leadscrews and vertical handwheel ring & pinion gears, as outlined on **Page 38.**

Protect other unpainted cast iron surfaces with regular applications of products like G96® Gun Treatment, SLIPIT®, or Boeshield® T-9.

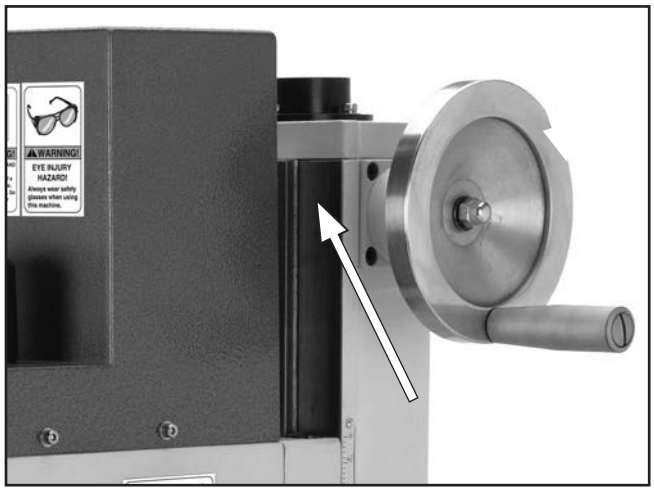


Figure 44. Vertical way lube location (both sides).

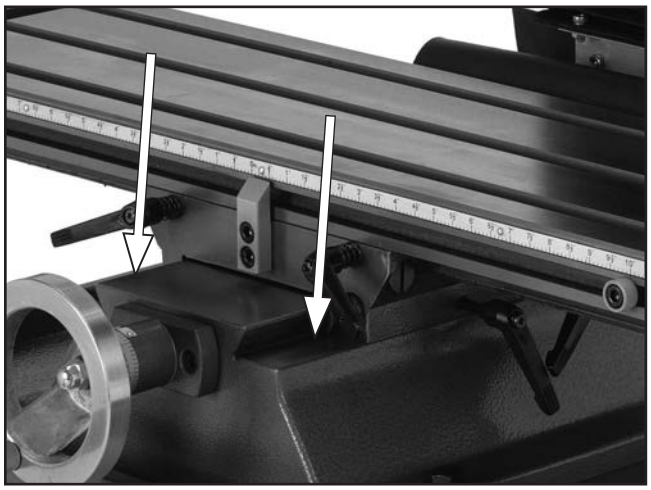


Figure 45. Cross way lube locations.

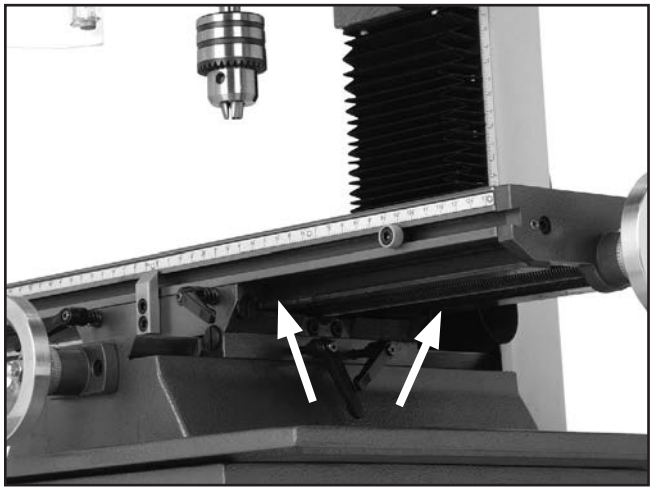


Figure 46. Longitudinal way lube locations.

Every six months, or more frequently under heavy use, we recommend that you clean and lubricate the leadscrews and vertical handwheel gears with a light machine oil and multi-purpose grease.

Tools Needed:	**Qty**
Hex Wrench 3, 4mm	1
Multi-Purpose Lithium Grease	1
Paint Brush for Grease Application	1
Oil Bottle of 10-30w Synthetic Oil	1
Stiff-Bristled Nylon Brush for Cleaning	1
Mineral Spirits	As needed for cleaning
Shop Rags	As needed for cleaning

To lubricate the leadscrews:

1. DISCONNECT MILL/DRILL FROM POWER!

2. Lower the headstock as far as you can without the spindle contacting the table surface.

3. Use mineral spirits and a brush to clean as much of the existing grease and debris as possible off of the vertical leadscrew shown in **Figure 47**. Allow leadscrew to dry.

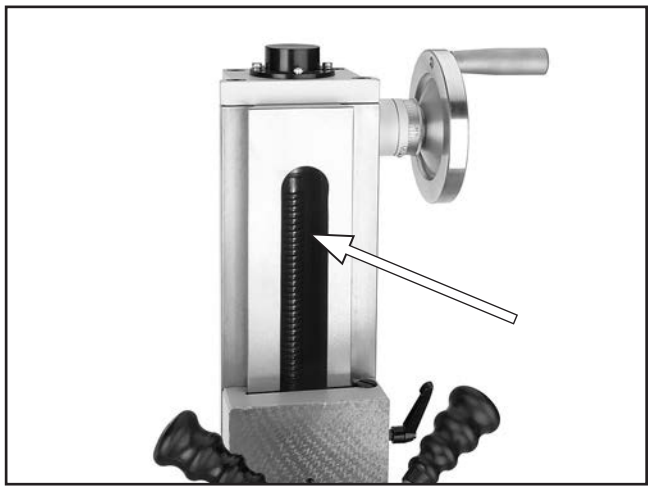


Figure 47. Vertical leadscrew location.

4. Apply light machine oil to the exposed leadscrew threads, then move the headstock through its full range of motion several times to disperse the oil along the full length of the leadscrew.

5. Using the cross handwheel, move the table as far forward as possible.

6. Lift or remove the rubber way cover, then use mineral spirits and a brush to clean as much of the existing grease and debris as possible off of the cross travel leadscrew shown in **Figure 48**. Allow leadscrew to dry.

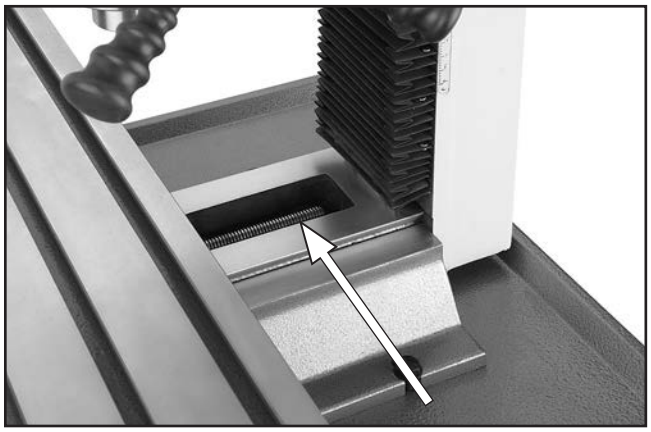


Figure 48. Cross travel leadscrew location.

7. Apply light machine oil to the exposed leadscrew threads, then move the table through its full range of cross motion several times to disperse the oil along the full length of the leadscrew.

8. Using the longitudinal handwheel, move the table as far to one side as possible.

9. From beneath the table, use mineral spirits and a brush to clean as much of the existing grease and debris as possible off of the longitudinal travel leadscrew shown in **Figure 49**. Allow the leadscrew to dry.

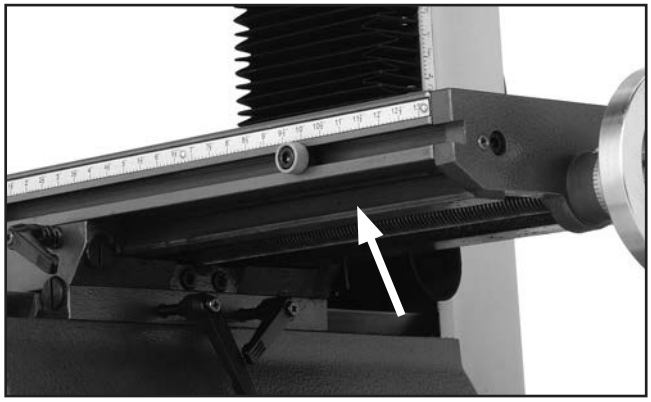


Figure 49. Longitudinal leadscrew location.

10. Apply light machine oil to the exposed leadscrew threads, then move the table through its full range of longitudinal motion several times to disperse the oil along the full length of the leadscrew.

To lubricate the vertical leadscrew bushing and ring & pinion gears:

1. DISCONNECT MILL/DRILL FROM POWER!

2. Remove the bushing cap by unthreading the four cap screws that secure it (**Figure 50**).

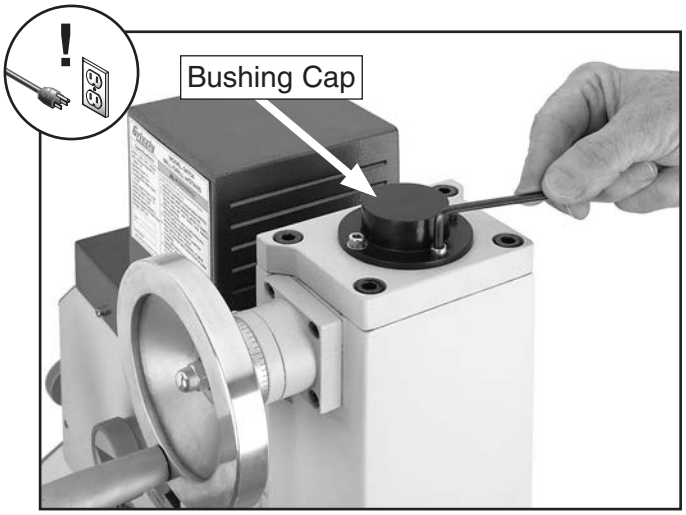


Figure 50. Bushing cap removal.

3. Apply several drops of light machine oil to the bushing edge, then rotate the vertical handwheel to disperse the oil (**Figure 51**).

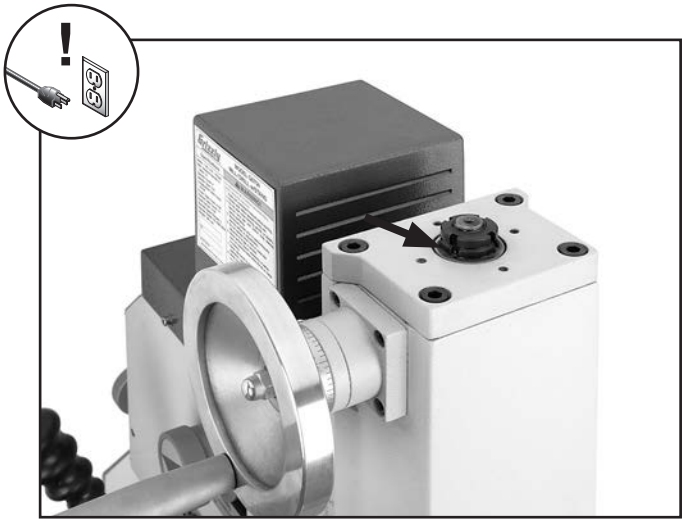


Figure 51. Bushing oil location.

4. Replace the bushing cap.

5. Remove the acorn nut and flat washer that secure the vertical handwheel, then remove the handwheel (**Figure 52**).

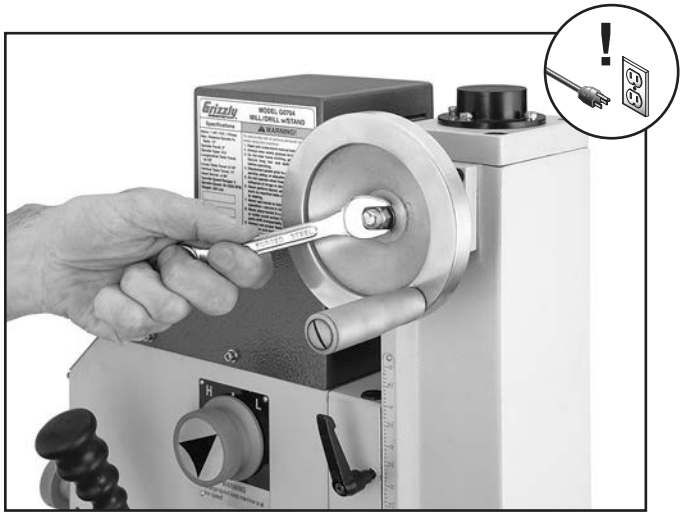


Figure 52. Handwheel removal.

6. Remove the four cap screws that secure the handwheel shaft pillow block, then carefully remove the assembly (**Figure 53**).

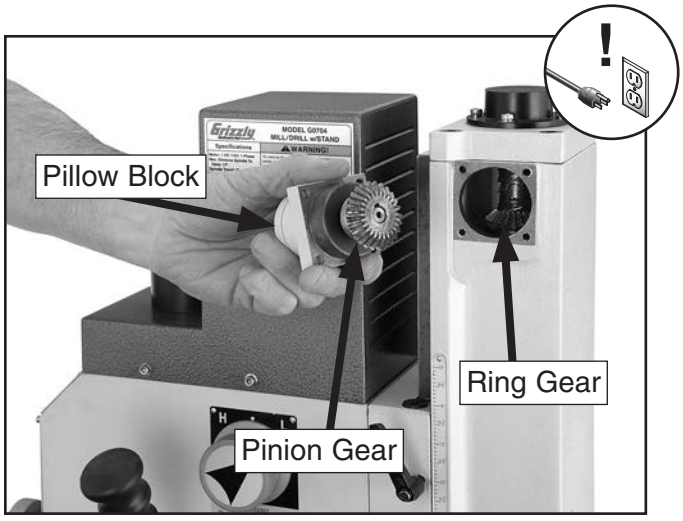


Figure 53. Handwheel gears.

7. Use mineral spirits and a brush and rag to clean as much of the existing grease and debris as possible off of the ring and pinion gears. Allow the parts to dry.

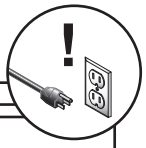
8. Apply a liberal coat of multi-purpose grease to the pinion gear.

9. Re-assemble the machine by reversing the steps above.

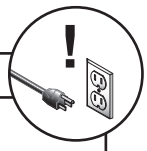
SECTION 7: SERVICE

Review the troubleshooting and procedures in this section if a problem develops with your machine. If you need replacement parts or additional help with a procedure, call our Technical Support at (570) 546-9663.
Note: *Please gather the serial number and manufacture date of your machine before calling.*

Troubleshooting



Symptom	Possible Cause	Possible Solution
Machine does not start.	1. Circuit breaker on machine tripped.	1. Press reset button on motor junction box; reduce load on motor to prevent overheating.
	2. Plug at fault or wired incorrectly.	2. Ensure plug is not damaged and is wired correctly.
	3. Motor wired incorrectly.	3. Ensure motor wiring is correct.
	4. Wall fuse/circuit breaker is blown/tripped.	4. Ensure circuit size is correct and a short does not exist. Reset breaker or replace fuse.
	5. Wiring is open/has high resistance.	5. Check for broken wires or disconnected/corroded connections; repair/replace as necessary.
	6. Machine power switch is at fault.	6. Ensure switch is wired correctly; replace if at fault.
	7. Motor is at fault.	7. Test/repair/replace.
Machine stalls or is overloaded.	1. Feed rate/cutting speed too fast.	1. Decrease feed rate/cutting speed.
	2. Wrong cutter type.	2. Use the correct cutter for the task.
	3. Machine is undersized for the task or tooling is incorrect for the task.	3. Use smaller or sharper tooling; reduce feed rate or spindle speed; use cutting fluid if possible.
	4. Motor connection is wired incorrectly.	4. Wire motor correctly for the intended voltage.
	5. Motor bearings are at fault.	5. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.
	6. Motor has overheated.	6. Clean off motor, let cool, and reduce workload.
	7. Motor is at fault.	7. Test/repair/replace motor.
Machine has vibration or noisy operation.	1. Motor or machine component is loose.	1. Inspect/replace stripped or damaged bolts/nuts, and re-tighten with thread locking fluid.
	2. Excessive depth of cut.	2. Decrease depth of cut.
	3. Cutter/tooling is loose.	3. Make sure tooling is properly secured.
	4. Cutter is dull or at fault.	4. Replace/resharpen cutter.
	5. Bit is chattering.	5. Replace/sharpen bit; index bit to workpiece; use appropriate feed rate and cutting RPM.
	6. Machine is incorrectly mounted or sits unevenly.	6. Tighten/replace mounting bolts in bench; relocate/shim machine.
	7. Motor bearings are at fault.	7. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.



Symptom	Possible Cause	Possible Solution
Tool slips in collet.	1. Collet is not fully drawn up into spindle taper. 2. Wrong size collet. 3. Debris on collet or in spindle taper. 4. Taking too big of a cut.	1. Tighten drawbar. 2. Measure tool shank diameter and match with appropriate diameter collet. 3. Clean collet and spindle taper. 4. Lessen depth of cut and allow chips to clear.
Breaking tools or cutters.	1. Spindle speed too slow/feed rate is too fast. 2. Cutting tool getting too hot. 3. Taking too big of a cut. 4. Spindle extended too far down.	1. Set spindle speed correctly (**Page 27**) or use a slower feed rate. 2. Use coolant fluid or oil for appropriate application. (Follow cutting fluid manufacturer's recommendation for proper use and safety.) 3. Decrease depth of cut. 4. Fully retract spindle and lower headstock. This increases rigidity.
Workpiece vibrates or chatters during operation.	1. Table locks not tight. 2. Quill lock lever not tight. 3. Workpiece not securely clamped to table or into mill vice. 4. Spindle speed is too slow /feed rate is too fast. 5. Spindle extended too far down.	1. Tighten down table locks (**Page 32**). 2. Tighten quill lock lever. 3. Check that clamping is tight and sufficient for the job. Make sure mill vice is tight to the table. 4. Set spindle speed correctly (**Page 27**) or use a slower feed rate. 5. Fully retract spindle and lower headstock. This increases rigidity.
Table is hard to move.	1. Table locks are tightened down. 2. Chips have loaded up on ways. 3. Ways are dry and need lubrication. 4. Table limit stops are interfering. 5. Gibs are too tight.	1. Make sure table locks are fully released. 2. Frequently clean away chips that load up during milling operations. 3. Lubricate ways and handles (**Page 36**). 4. Check to make sure that all table limit stops are not in the way. 5. Adjust gibs (see **Page 41**).
Bad surface finish.	1. Spindle speed is too slow/feed rate is too fast. 2. Using a dull or incorrect cutting tool. 3. Wrong rotation of cutting tool. 4. Workpiece not securely clamped. 5. Spindle extended too far down.	1. Set spindle speed correctly (**Page 27** or use a slower feed rate. 2. Sharpen cutting tool or select one that better suits the operation. 3. Check for proper cutting rotation for cutting tool. 4. Secure properly to the table. 5. Fully retract spindle and lower headstock. This increases rigidity.

Gibs

Gibs are wedge-shaped pieces of metal that fill the gap between the sliding surfaces of the machine. By adjusting the position of the gib in its gap, you can remove any play that might exist between the adjacent components. The gibs are pre-adjusted at the factory but due to storage, break-in, and usage, may require adjustment. If movement seems too tight at first, make sure that all the rust preventative that was shipped on the machine is removed from the ways. Lubricate the ways with oil, and work the table back-and-forth several times until the movement is easier.

To adjust the table gibs:

1. DISCONNECT MILL/DRILL FROM POWER!

2. Loosen the table travel locks (**Figure 54**).

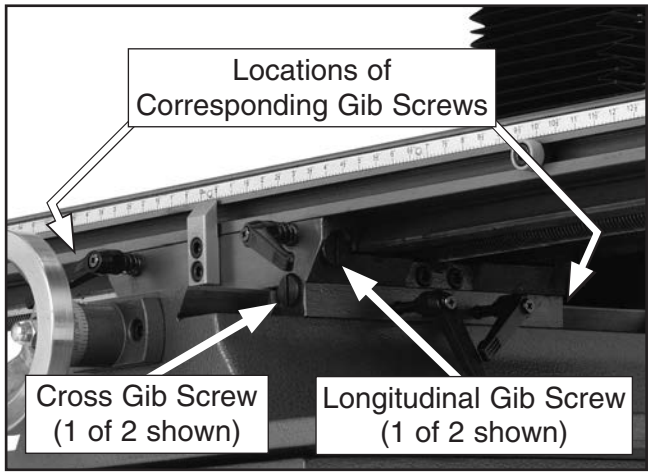


Figure 54. Table gib adjustment screw locations.

3. Loosen or tighten the front and rear gib screws (**Figure 54**) in an alternating manner to adjust the cross travel gib.

   The table should slide smoothly in the cross direction with no play or looseness. Do not overtighten the gibs or premature slide and gib wear will occur.

4. Lubricate the cross way and gib.

5. Repeat the process for the longitudinal way gib using the gib adjustment screws on the left and right sides of the table base.

To adjust the headstock gibs:

1. DISCONNECT MILL/DRILL FROM POWER!

2. Remove the two screws that secure the top end of the way cover, pull it down to expose the lower gib screw, then loosen the vertical travel locks (**Figure 55**).

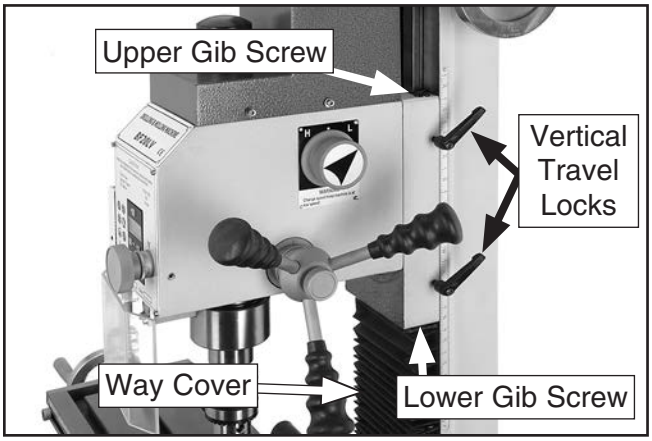


Figure 55. Headstock gib adjustment.

3. Loosen or tighten the upper and lower gib screws (**Figure 55**) in an alternating manner to adjust the headstock gib.

   The headstock should slide smoothly with no play or looseness. Do not overtighten the gibs or premature slide and gib wear will occur.

4. Lubricate the headstock way and gib.

5. Re-install the way cover.

Leadscrew Backlash

When you turn the handwheels to adjust the position of the table, you will notice slight play (backlash) in the handwheel before the table begins to move. If this play is greater than 0.008" (measured with the dial at the base of each handwheel), then you will need to adjust the leadscrew nuts.

To reach the adjustment screws on the leadscrew nut, you may have to fabricate extensions for your hex wrenches. When adjusting, make adjustments in small increments. Attempting to reduce backlash to less than 0.003" is impractical and will add unnecessary wear to both the leadscrews and the leadscrew nuts.

To adjust the X-axis leadscrew:

1. Locate the X-axis leadscrew nut under the middle of the table. The head on the adjustment screws face to the right (**Figure 56**).

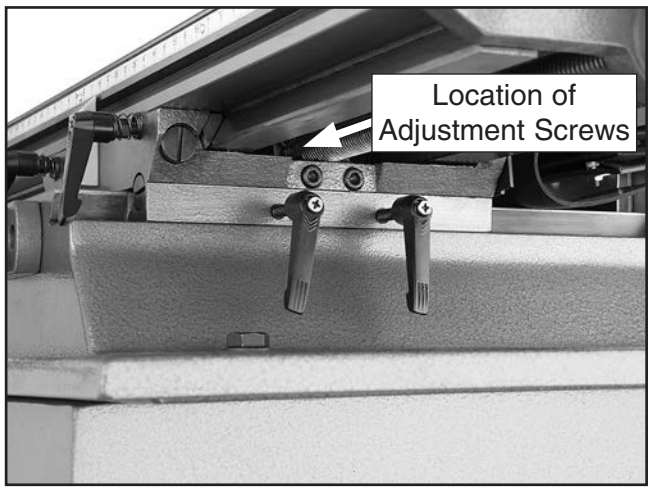


Figure 56. X-axis leadscrew adjusters.

2. Tighten the adjustment screws.

3. Test the adjustment by turning one of the longitudinal handwheels. The ideal amount of play when properly adjusted is 0.003"–0.006".

To adjust the Y-axis leadscrew nut:

1. Locate the leadscrew nut underneath the table through the hole in the base under the rubber way cover.

2. Tighten the adjustment screws on the leadscrew nut in the same manner as described for the X-axis leadscrew adjustment.

3. Test the adjustment by turning one of the cross handwheels. The ideal amount of play when properly adjusted is 0.003"–0.006".

Digital Readout Unit Battery Replacement

If the digital readout unit stops functioning, the battery must be replaced.

To replace the digital readout unit battery:

1. Use a wide (#3) standard screwdriver or the edge of a coin to remove the battery cover (**Figure 57**).

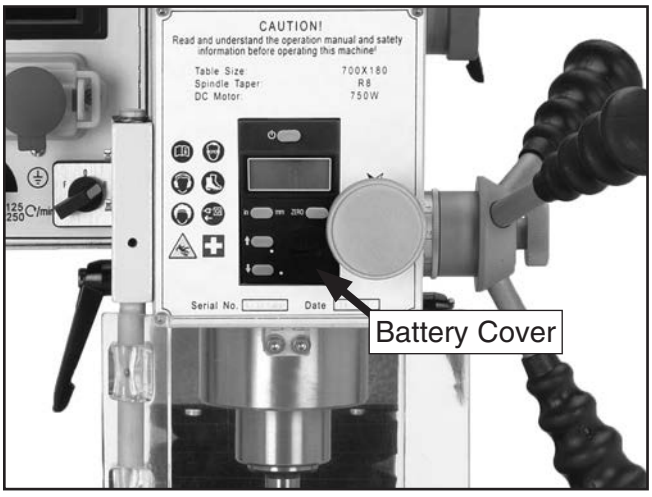


Figure 57. Battery replacement.

2. Remove the old battery, dispose of it according to state and federal regulations, then replace it with a new one.

3. Replace the battery cover.

Motor Service

The bearings inside the motor are shielded and lubricated for the life of the bearing and require no routine maintenance.

This motor is equipped with long life carbon brushes. Brush life expectancy is affected by motor loading. Heavy motor loading will result in reduced brush life. If you notice a loss in power or if the motor becomes excessively noisy, inspect the brushes. If the brushes are worn down to ¼" (6mm) or less, it is time to replace them. When checking brushes, be sure to return each brush to the same hole in the same direction that it came from. When replacing old brushes, replace both brushes at the same time.

Tools Needed:	**Qty**
Hex Wrench 3mm	1
Standard Screwdriver #2	1

To inspect and replace the motor brushes:

1. DISCONNECT MILL/DRILL FROM POWER!

2. Un-install the motor cover by removing the four cap screws that secure it (**Figure 58**).

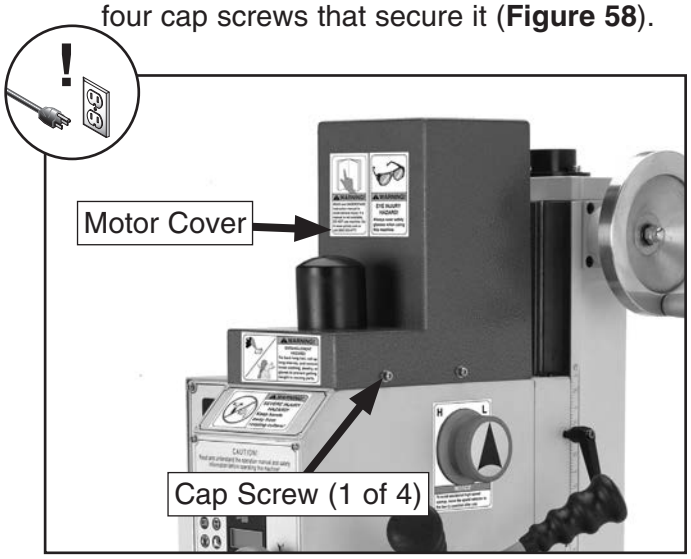


Figure 58. Removing motor cover.

3. Unscrew one of the brush caps to expose the brush assembly (**Figure 59**).

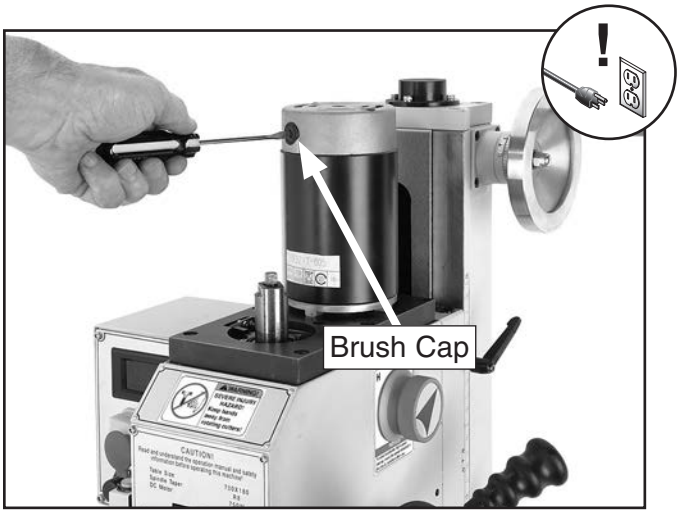


Figure 59. Removing brush cap.

4. Remove the old brush assembly. If the brush is worn down to less than ¼" (6mm) then replace it with a new one. Otherwise re-install the brush (**Figure 60**).

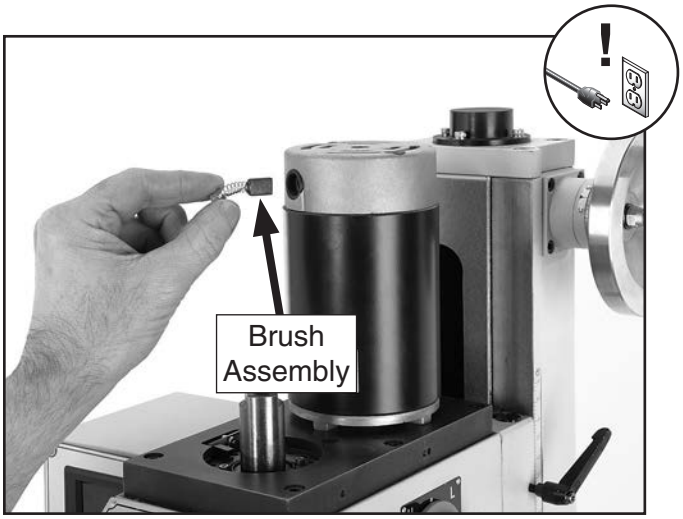


Figure 60. Installing new brush assembly.

5. Replace the brush cap to secure the brush in place.

6. Repeat for second brush assembly on the other side of the motor.

SECTION 8: WIRING

These pages are current at the time of printing. However, in the spirit of improvement, we may make changes to the electrical systems of future machines. Compare the manufacture date of your machine to the one stated in this manual, and study this section carefully.

If there are differences between your machine and what is shown in this section, call Technical Support at (570) 546-9663 for assistance BEFORE making any changes to the wiring on your machine. An updated wiring diagram may be available. **Note:** *Please gather the serial number and manufacture date of your machine before calling. This information can be found on the main machine label.*

⚠WARNING
Wiring Safety Instructions

SHOCK HAZARD. Working on wiring that is connected to a power source is extremely dangerous. Touching electrified parts will result in personal injury including but not limited to severe burns, electrocution, or death. Disconnect the power from the machine before servicing electrical components!

MODIFICATIONS. Modifying the wiring beyond what is shown in the diagram may lead to unpredictable results, including serious injury or fire. This includes the installation of unapproved aftermarket parts.

WIRE CONNECTIONS. All connections must be tight to prevent wires from loosening during machine operation. Double-check all wires disconnected or connected during any wiring task to ensure tight connections.

CIRCUIT REQUIREMENTS. You MUST follow the requirements at the beginning of this manual when connecting your machine to a power source.

WIRE/COMPONENT DAMAGE. Damaged wires or components increase the risk of serious personal injury, fire, or machine damage. If you notice that any wires or components are damaged while performing a wiring task, replace those wires or components.

MOTOR WIRING. The motor wiring shown in these diagrams is current at the time of printing but may not match your machine. If you find this to be the case, use the wiring diagram inside the motor junction box.

CAPACITORS/INVERTERS. Some capacitors and power inverters store an electrical charge for up to 10 minutes after being disconnected from the power source. To reduce the risk of being shocked, wait at least this long before working on capacitors.

EXPERIENCING DIFFICULTIES. If you are experiencing difficulties understanding the information included in this section, contact our Technical Support at (570) 546-9663.

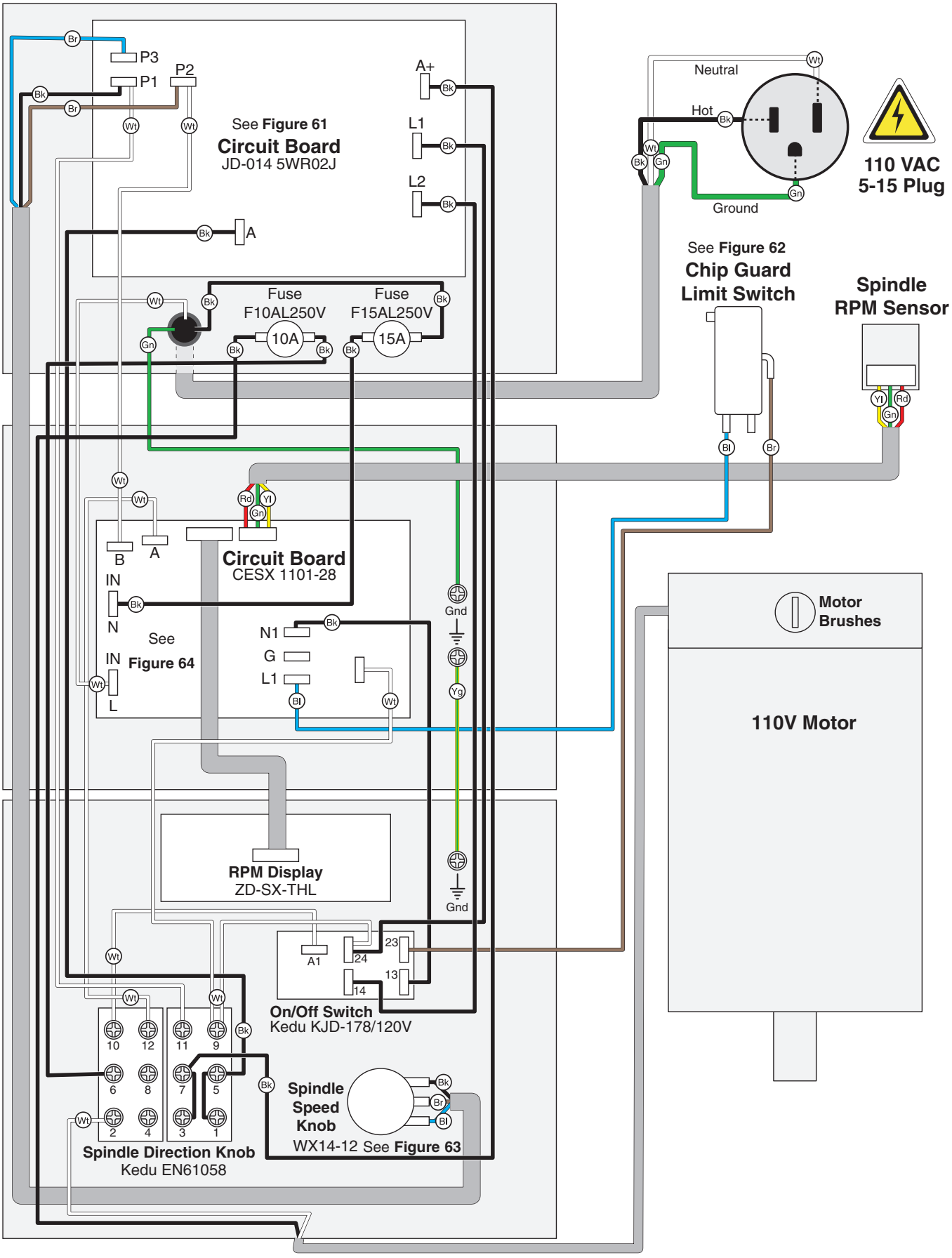
NOTICE

The photos and diagrams included in this section are best viewed in color. You can view these pages in color at www.grizzly.com.

COLOR KEY

BLACK	Bk	BLUE	Bl	YELLOW	Yl	LIGHT BLUE	Lb
WHITE	Wt	BROWN	Br	YELLOW GREEN	Yg	BLUE WHITE	Bw
GREEN	Gn	GRAY	Gy	PURPLE	Pu		
RED	Rd	ORANGE	Or	PINK	Pk	TURQUOISE	Tu

Wiring Diagram



Electrical Components

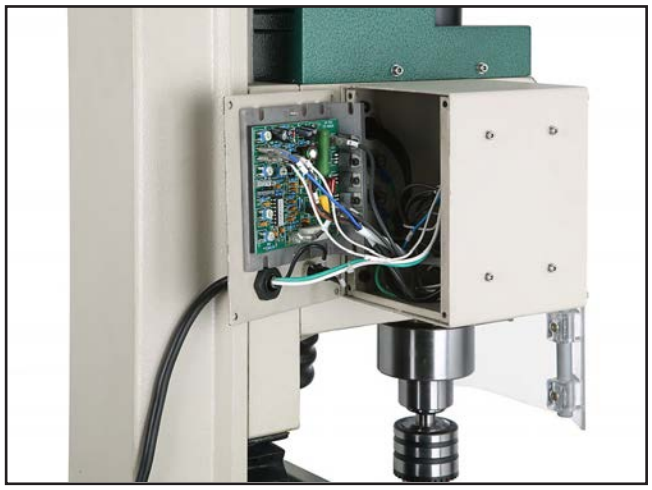


Figure 61. Rear panel.

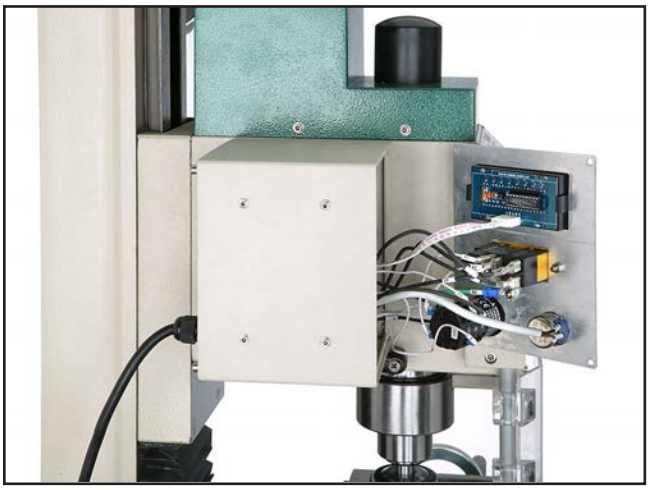


Figure 63. Control panel wiring.

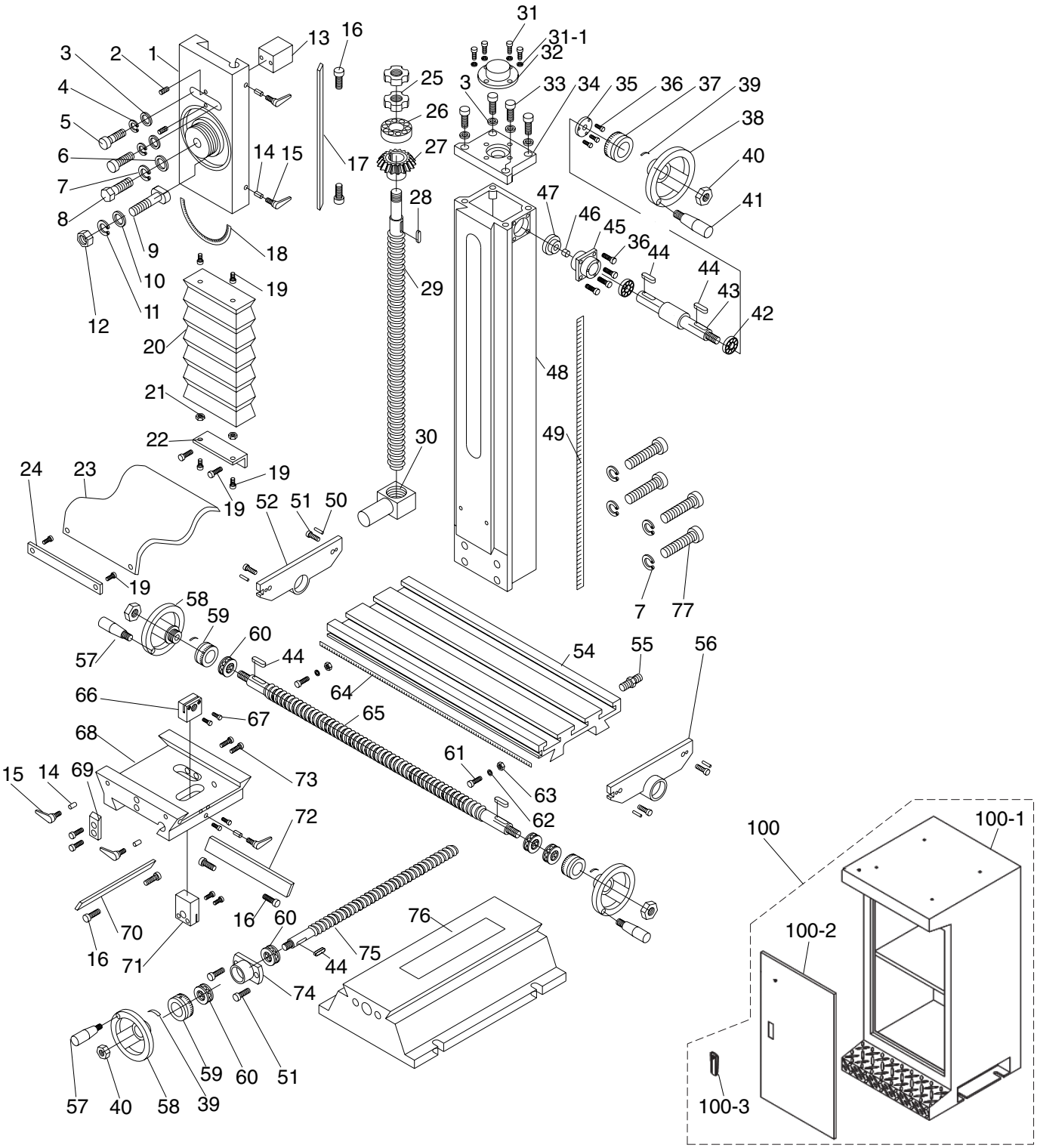
Figure 62. Chip guard limit switch.

Figure 64. Side panel.

READ ELECTRICAL SAFETY ON PAGE 44!

SECTION 9: PARTS

Column Breakdown

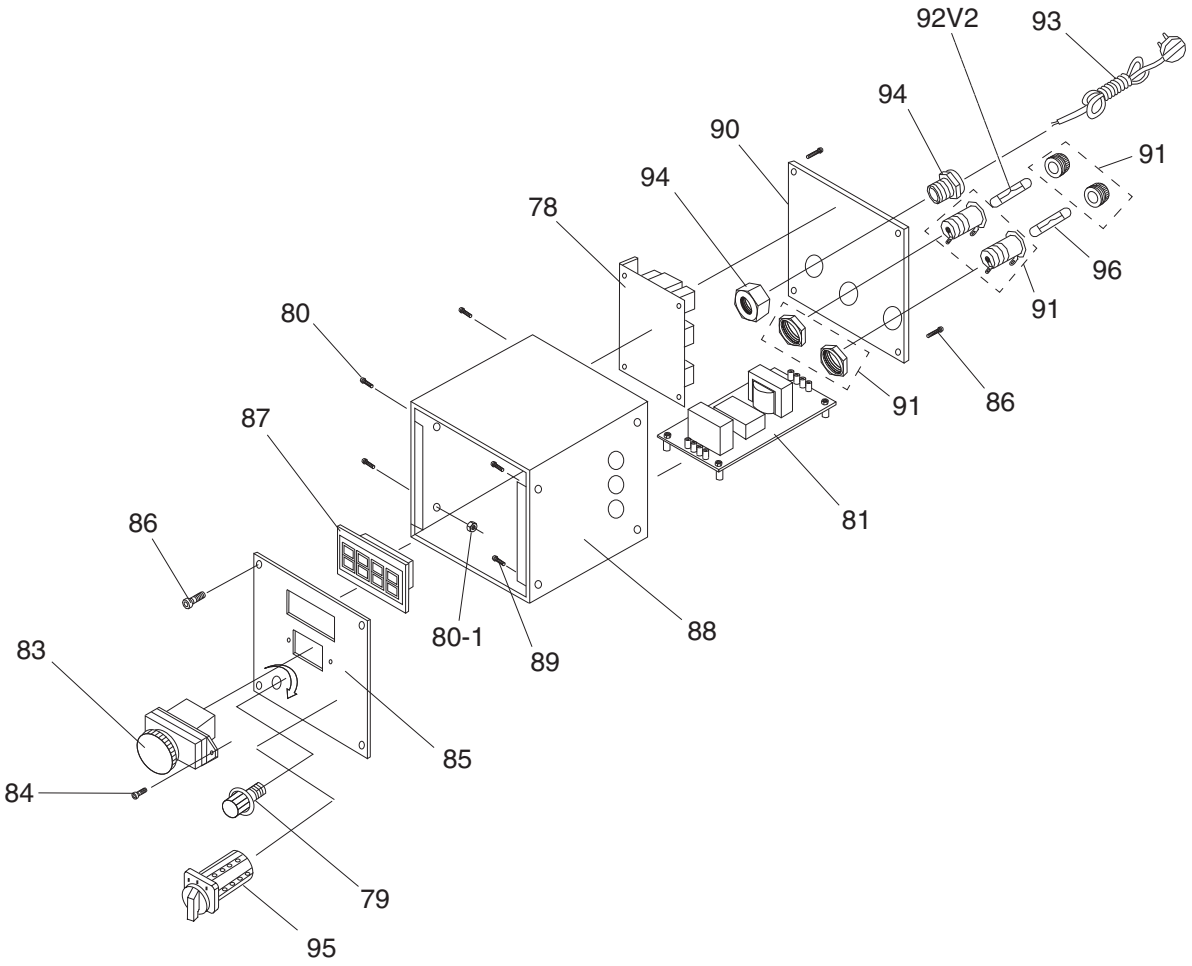


Column Parts List

REF	PART #	DESCRIPTION
1	P0704001	Z-AXIS SLIDE
2	P0704002	SET SCREW M6-1 X 16
3	P0704003	FLAT WASHER 8MM
4	P0704004	LOCK WASHER 8MM
5	P0704005	CAP SCREW M8-1.25 X 25
6	P0704006	FLAT WASHER 12MM
7	P0704007	LOCK WASHER 12MM
8	P0704008	CAP SCREW M12-1.75 X 40
9	P0704009	T-BOLT M10-1.5
10	P0704010	FLAT WASHER 10MM
11	P0704011	LOCK WASHER 10MM
12	P0704012	HEX NUT M10-1.5
13	P0704013	SLIDE ALIGNMENT BLOCK
14	P0704014	BRASS PIN
15	P0704015	ADJUSTABLE HANDLE M6-1 X 16
16	P0704016	GIB ADJUSTMENT SCREW
17	P0704017	Z-AXIS GIB
18	P0704018	HEADSTOCK ANGLE SCALE
19	P0704019	CAP SCREW M5-.8 X 10
20	P0704020	Z-AXIS WAY COVER
21	P0704021	HEX NUT M5-.8
22	P0704022	Z-AXIS WAY COVER BRACKET
23	P0704023	Y-AXIS WAY COVER
24	P0704024	Y-AXIS WAY COVER BRACKET
25	P0704025	LEADSCREW LOCK NUT M16-1.5
26	P0704026	THRUST BEARING 51203
27	P0704027	RING GEAR
28	P0704028	KEY 4 X 4 X 16
29	P0704029	Z-AXIS LEADSCREW
30	P0704030	Z-AXIS LEADSCREW NUT
31	P0704031	CAP SCREW M5-.8 X 12
31-1	P0704031-1	FLAT WASHER 5MM
32	P0704032	BEARING COVER
33	P0704033	CAP SCREW M8-1.25 X 20
34	P0704034	COLUMN TOP PLATE
35	P0704035	COLLAR FLANGE
36	P0704036	CAP SCREW M5-.8 X 12
37	P0704037	Z-AXIS GRADUATED DIAL
38	P0704038	Z-AXIS HANDWHEEL
39	P0704039	HANDWHEEL CURVED PLATE SPRING
40	P0704040	HEX NUT M8-1.25

REF	PART #	DESCRIPTION
41	P0704041	Z-AXIS HANDWHEEL HANDLE M6-1 X 10
42	P0704042	BALL BEARING 6001ZZ
43	P0704043	Z-AXIS HANDWHEEL SHAFT
44	P0704044	KEY 4 X 4 X 12
45	P0704045	PILLOW BLOCK
46	P0704046	SPACER
47	P0704047	PINION GEAR
48	P0704048	COLUMN
49	P0704049	Z-AXIS SCALE
50	P0704050	THREADED SLEEVE M6-1 X 16
51	P0704051	CAP SCREW M6-1 X 14
52	P0704052	X-AXIS LEADSCREW BRACKET (LH)
54	P0704054	TABLE
55	P0704055	COOLANT HOSE FITTING
56	P0704056	X-AXIS LEADSCREW BRACKET (RH)
57	P0704057	TABLE HANDWHEEL HANDLE M6-1 X 10
58	P0704058	TABLE HANDWHEEL
59	P0704059	TABLE GRADUATED DIAL
60	P0704060	THRUST BEARING 51200
61	P0704061	CAP SCREW M6-1 X 10
62	P0704062	LIMIT STOP
63	P0704063	T-NUT M6-1
64	P0704064	X-AXIS SCALE
65	P0704065	X-AXIS LEADSCREW
66	P0704066	X-AXIS LEADSCREW NUT
67	P0704067	CAP SCREW M4-.7 X 20
68	P0704068	SADDLE
69	P0704069	TABLE STOP BLOCK
70	P0704070	Y-AXIS GIB
71	P0704071	Y-AXIS LEADSCREW NUT
72	P0704072	X-AXIS GIB
73	P0704073	CAP SCREW M6-1 X 25
74	P0704074	X-AXIS BEARING HOUSING
75	P0704075	Y-AXIS LEADSCREW
76	P0704076	BASE
77	P0704077	CAP SCREW M12-1.75 X 90
100	P0704100	STAND ASSEMBLY
100-1	P0704100-1	STAND CABINET
100-2	P0704100-2	STAND DOOR
100-3	P0704100-3	STAND DOOR LATCH

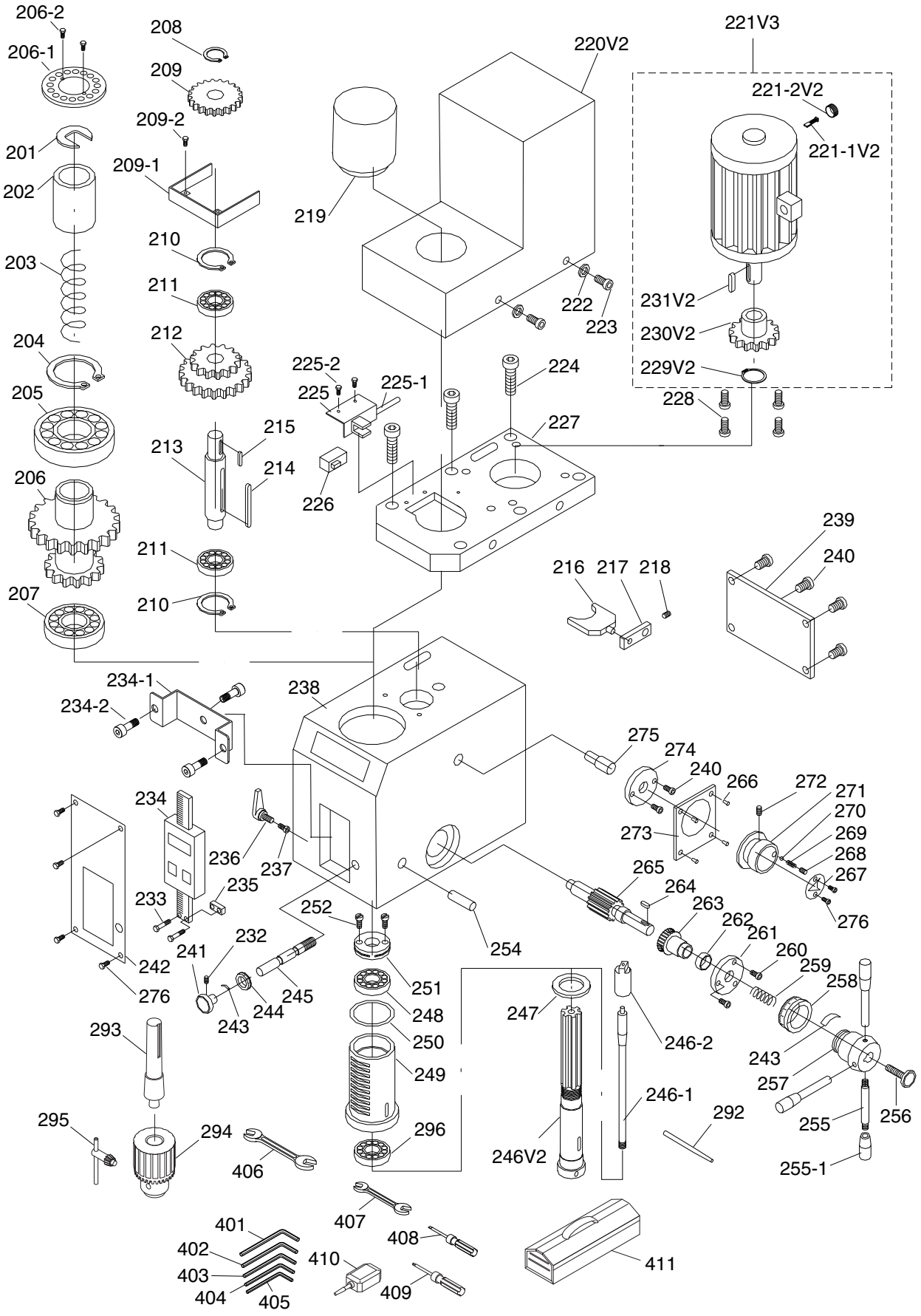
Electrical Box Breakdown & Parts List



REF	PART #	DESCRIPTION
78	P0704078	CIRCUIT BOARD JD-014 5WR02J
79	P0704079	SPINDLE SPEED KNOB WX14-12
80	P0704080	CAP SCREW M3-.5 X 16
80-1	P0704080-1	HEX NUT M3-.5
81	P0704081	CIRCUIT BOARD CESX 1101-28
83	P0704083	ON/OFF SWITCH KEDU KJD-178/120V
84	P0704084	CAP SCREW M4-.7 X 10
85	P0704085	CONTROL PANEL PLATE
86	P0704086	CAP SCREW M4-.7 X 6
87	P0704087	RPM DIGITIAL DISPLAY ZD-SX-THL

REF	PART #	DESCRIPTION
88	P0704088	ELECTRICAL BOX
89	P0704089	CAP SCREW M5-.8 X 8
90	P0704090	ELECTRICAL BOX REAR COVER
91	P0704091	FUSE HOLDER
92V2	P0704092V2	FUSE F15AL250V 15A V2.01.10
93	P0704093	POWER CORD 16G 3W 72" 5-15
94	P0704094	STRAIN RELIEF M20 X 1.5 TYPE-3
95	P0704095	FWD/REV SWITCH KEDU EN61058
96	P0704096	FUSE F10AL250V 10A

Headstock Breakdown

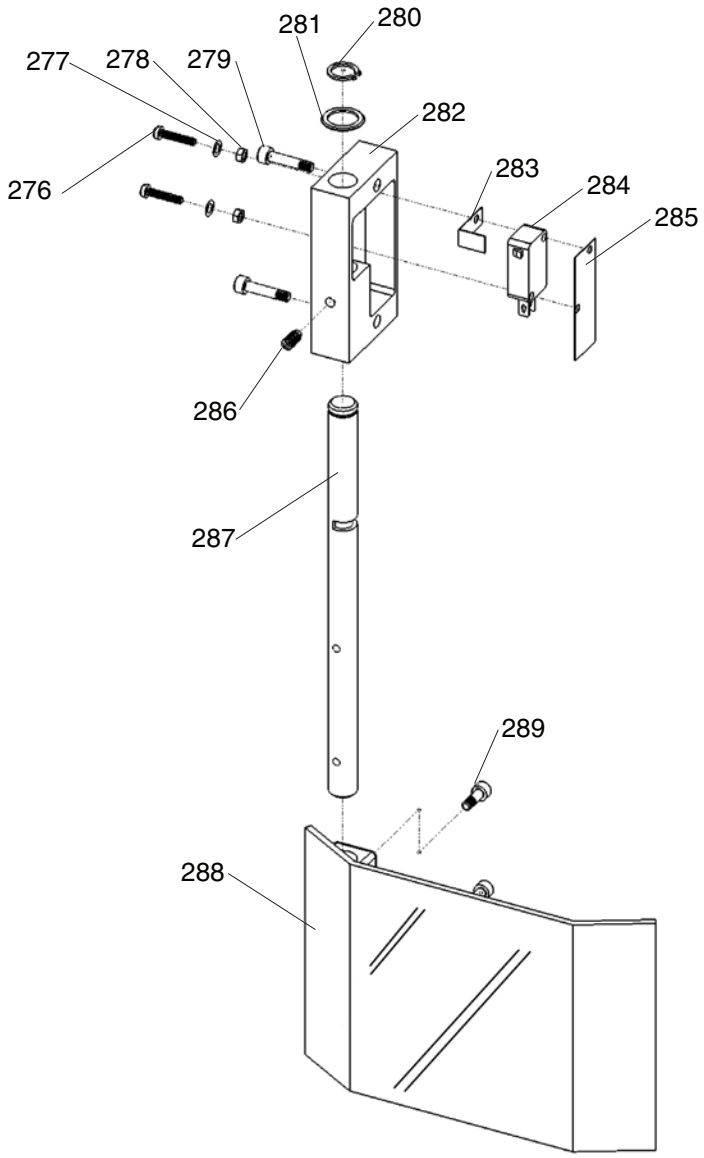


Headstock Parts List

REF	PART #	DESCRIPTION
201	P0704201	QUILL RETANING CLIP
202	P0704202	BUSHING
203	P0704203	COMPRESSION SPRING
204	P0704204	EXT RETAINING RING 45MM
205	P0704205	BALL BEARING 6209ZZ
206	P0704206	GEARS 60/70T
206-1	P0704206-1	SPINDLE RING 16MM
206-2	P0704206-2	CAP SCREW M3-.5 X 8
207	P0704207	BALL BEARING 6007-2RS
208	P0704208	EXT RETAINING RING 15MM
209	P0704209	GEAR 37T
209-1	P0704209-1	GUARD
209-2	P0704209-2	CAP SCREW M3-.5 X 6
210	P0704210	EXT RETAINING RING 32MM
211	P0704211	BALL BEARING 6002ZZ
212	P0704212	GEAR 42/62T
213	P0704213	SHAFT
214	P0704214	KEY 5 X 5 X 50
215	P0704215	KEY 5 X 5 X 12
216	P0704216	FORK
217	P0704217	FORK ARM
218	P0704218	SET SCREW M5-.8 X 8
219	P0704219	DRAWBAR CAP
220	P0704220	MOTOR COVER
221V3	P0704221V3	MOTOR 1HP 110V (14MM SHAFT) V3.04.13
221-1V2	P0704221-1V2	CARBON BRUSH 1-PC V2.11.12
221-2V2	P0704221-2V2	CARBON BRUSH CAP 1-PC V2.11.12
222	P0704222	FLAT WASHER 4MM
223	P0704223	CAP SCREW M4-.7 X 8
224	P0704224	CAP SCREW M6-1 X 14
225	P0704225	SENSOR BRACKET
225-1	P0704225-1	SENSOR CORD
225-2	P0704225-2	CAP SCREW M3-.5 X 6
226	P0704226	RPM SENSOR
227	P0704227	MOTOR PLATE
228	P0704228	CAP SCREW M5-.8 X 12
229V2	P0704229V2	EXT RETAINING RING 14MM
230V2	P0704230V2	GEAR 20T (ID 14MM) V2.04.13
231V2	P0704231V2	KEY 5 X 5 X 15
232	P0704232	SET SCREW M5-.8 X 6
233	P0704233	CAP SCREW M3-.5 X 6
234	P0704234	DIGITAL READOUT UNIT
234-1	P0704234-1	DIGITAL READOUT BRACKET
234-2	P0704234-2	CAP SCREW M4-.7 X 10
235	P0704235	BASE BLOCK
236	P0704236	QUILL LOCKING LEVER
237	P0704237	BRASS PIN

REF	PART #	DESCRIPTION
238	P0704238	MILL HEAD CASTING
239	P0704239	COVER PLATE
240	P0704240	CAP SCREW M4-.7 X 8
241	P0704241	FINE FEED KNOB
242	P0704242	FRONT COVER
243	P0704243	HANDWHEEL CURVED PLATE SPRING
244	P0704244	FINE FEED COLLAR
245	P0704245	WORM SHAFT
246V2	P0704246	SPINDLE V2.08.11
246-1	P0704246-1	DRAWBAR
246-2	P0704246-2	RETAINER CUP
247	P0704247	SPINDLE RING
248	P0704248	TAPERED ROLLER BEARING 32005
249	P0704249	QUILL SLEEVE
250	P0704250	RUBBER RING
251	P0704251	ADJUSTER NUT
252	P0704252	ADJUSTER NUT SCREW
254	P0704254	PIN 6 X 30
255	P0704255	HANDLE
255-1	P0704255-1	HANDLE GRIP
256	P0704256	SELECTOR KNOB
257	P0704257	DOWNFEED HUB
258	P0704258	DOWNFEED COLLAR
259	P0704259	COMPRESSION SPRING
260	P0704260	CAP SCREW M4-.7 X 40
261	P0704261	DOWNFEED FLANGE
262	P0704262	SPACER
263	P0704263	WORM GEAR
264	P0704264	KEY 4 X 4 X 12
265	P0704265	GEAR SHAFT
266	P0704266	RIVET
267	P0704267	HIGH/LOW ARROW PLATE
268	P0704268	SET SCREW M8-1.25 X 8
269	P0704269	COMPRESSION SPRING
270	P0704270	STEEL BALL 6.5MM
271	P0704271	SPEED SELECTOR KNOB
272	P0704272	SET SCREW M5-.8 X 16
273	P0704273	SPEED KNOB PLATE
274	P0704274	FORK SHAFT FLANGE
275	P0704275	FORK SHAFT
276	P0704276	CAP SCREW M3-.5 X 16
292	P0704292	SPINDLE PIN
293	P0704293	ARBOR R8 X B16
294	P0704294	DRILL CHUCK B16 3-16MM
295	P0704295	CHUCK KEY FOR B16 16MM CHUCK
296	P0704296	TAPERED ROLLER BEARING 32007

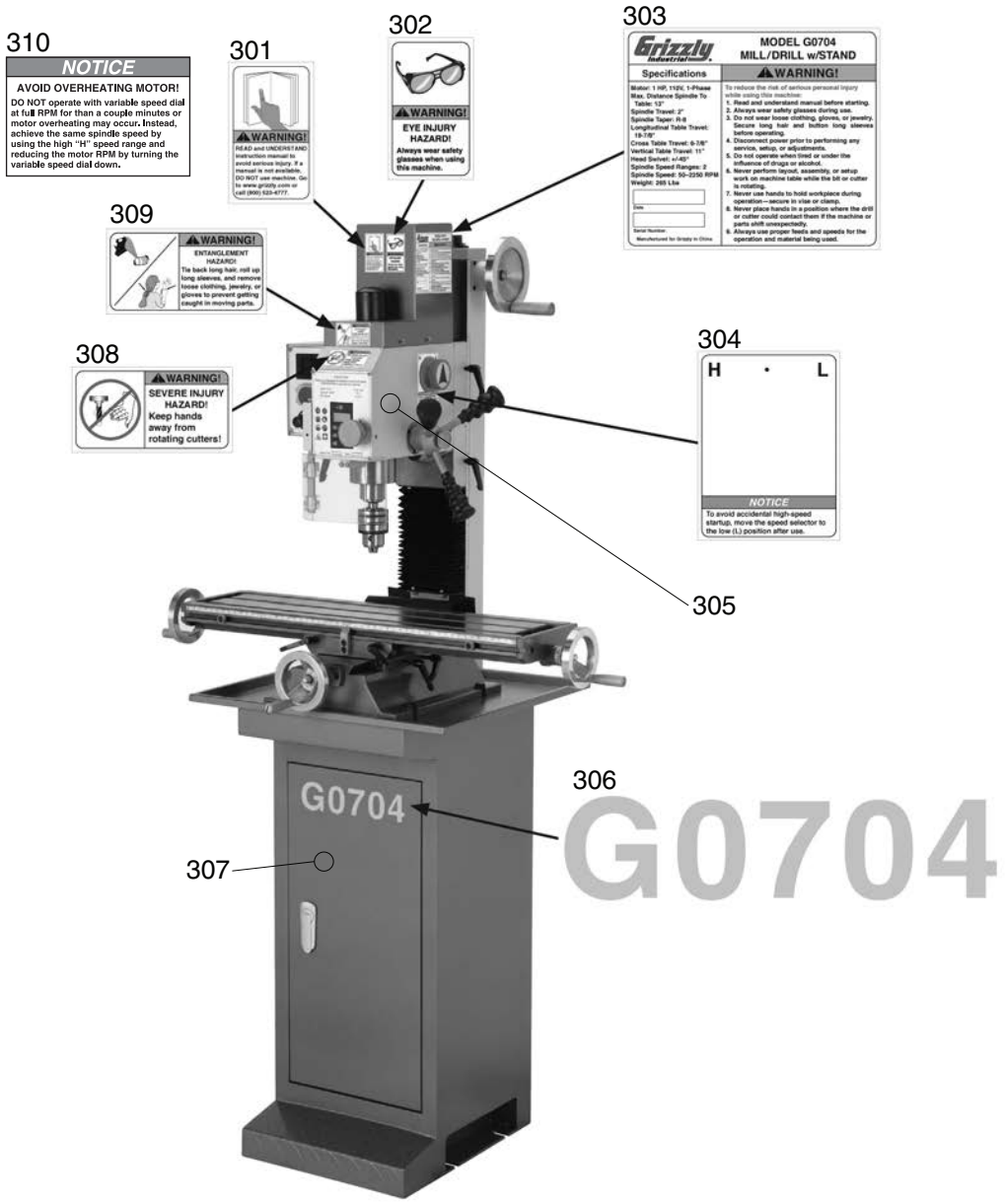
Chip Guard Breakdown & Parts List



REF	PART #	DESCRIPTION
277	P0704277	FLAT WASHER 3MM
278	P0704278	HEX NUT M3-.5
279	P0704279	CAP SCREW M4-.7 X 20
280	P0704280	EXT RETAINING RING 12MM
281	P0704281	WAVY WASHER 20MM
282	P0704282	GUARD MOUNTING BLOCK
283	P0704283	COPPER SPACER

REF	PART #	DESCRIPTION
284	P0704284	GUARD LIMIT SWITCH
285	P0704285	PROTECTIVE PAPER
286	P0704286	SET SCREW M5-.8 X 10
287	P0704287	CHIP GUARD POST
288	P0704288	CHIP GUARD
289	P0704289	CAP SCREW M4-.7 X 18

Labels Breakdown & Parts List


310
NOTICE
AVOID OVERHEATING MOTOR!
DO NOT operate with variable speed dial at full RPM for than a couple minutes or motor overheating may occur. Instead, achieve the same spindle speed by using the high "H" speed range and reducing the motor RPM by turning the variable speed dial down.
301
WARNING!
302
WARNING!
EYE INJURY HAZARD!
Always wear safety glasses when using this machine.
303
Grizzly
MODEL G0704
MILL/DRILL w/STAND
Specifications
WARNING!
309
WARNING!
ENTANGLEMENT HAZARD!
Tie back long hair, roll up long sleeves, and remove loose clothing, jewelry, or gloves to prevent getting caught in moving parts.
308
WARNING!
SEVERE INJURY HAZARD!
Keep hands away from rotating cutters!
304
H · L
NOTICE
To avoid accidental high-speed startup, move the speed selector to the low (L) position after use.
305
306
307
G0704
G0704

REF	PART #	DESCRIPTION
301	P0704301	READ MANUAL LABEL
302	P0704302	SAFETY GLASSES LABEL
303	P0704303	MACHINE ID LABEL
304	P0704304	HIGH/LOW SPEED LABEL
305	P0704305	PUTTY TOUCH-UP PAINT

REF	PART #	DESCRIPTION
306	P0704306	MODEL NUMBER LABEL
307	P0704307	GREEN TOUCH-UP PAINT
308	P0704308	CUTTER WARNING LABEL
309	P0704309	ENTANGLEMENT LABEL
310	P0704310	AVOID OVERHEATING NOTICE

⚠WARNING

Safety labels warn about machine hazards and ways to prevent injury. The owner of this machine MUST maintain the original location and readability of the labels on the machine. If any label is removed or becomes unreadable, REPLACE that label before using the machine again. Contact Grizzly at (800) 523-4777 or www.grizzly.com to order new labels.

NOTES

Grizzly Industrial, Inc. WARRANTY CARD

Name _____

Street _____

City _____ State _____ Zip _____

Phone # _____ Email _____

Model # _____ Order # _____ Serial # _____

The following information is given on a voluntary basis. It will be used for marketing purposes to help us develop better products and services. ***Of course, all information is strictly confidential.***

1. How did you learn about us?

____ Advertisement ____ Friend ____ Catalog
____ Card Deck ____ Website ____ Other:

2. Which of the following magazines do you subscribe to?

____ Cabinetmaker & FDM
____ Family Handyman
____ Hand Loader
____ Handy
____ Home Shop Machinist
____ Journal of Light Cont.
____ Live Steam
____ Model Airplane News
____ Old House Journal
____ Popular Mechanics
____ Popular Science
____ Popular Woodworking
____ Precision Shooter
____ Projects in Metal
____ RC Modeler
____ Rifle
____ Shop Notes
____ Shotgun News
____ Today's Homeowner
____ Wood
____ Wooden Boat
____ Woodshop News
____ Woodsmith
____ Woodwork
____ Woodworker West
____ Woodworker's Journal
____ Other:

3. What is your annual household income?

____ $20,000-$29,000 ____ $30,000-$39,000 ____ $40,000-$49,000
____ $50,000-$59,000 ____ $60,000-$69,000 ____ $70,000+

4. What is your age group?

____ 20-29 ____ 30-39 ____ 40-49
____ 50-59 ____ 60-69 ____ 70+

5. How long have you been a woodworker/metalworker?

____ 0-2 Years ____ 2-8 Years ____ 8-20 Years ____ 20+ Years

6. How many of your machines or tools are Grizzly?

____ 0-2 ____ 3-5 ____ 6-9 ____ 10+

7. Do you think your machine represents a good value? _____Yes _____No

8. Would you recommend Grizzly Industrial to a friend? _____Yes _____No

9. Would you allow us to use your name as a reference for Grizzly customers in your area?
Note: *We never use names more than 3 times.* _____Yes _____No

10. Comments: _____

_____

_____

CUT ALONG DOTTED LINE

FOLD ALONG DOTTED LINE

Place
Stamp
Here

GRIZZLY INDUSTRIAL, INC.
P.O. BOX 2069
BELLINGHAM, WA 98227-2069

FOLD ALONG DOTTED LINE

Send a Grizzly Catalog to a friend:

Name_____

Street_____

City_____State_____Zip_____

TAPE ALONG EDGES--PLEASE DO NOT STAPLE

WARRANTY AND RETURNS

Grizzly Industrial, Inc. warrants every product it sells for a period of **1 year** to the original purchaser from the date of purchase. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs or alterations or lack of maintenance. This is Grizzly's sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant or represent that the merchandise complies with the provisions of any law or acts unless the manufacturer so warrants. In no event shall Grizzly's liability under this warranty exceed the purchase price paid for the product and any legal actions brought against Grizzly shall be tried in the State of Washington, County of Whatcom.

We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

To take advantage of this warranty, contact us by mail or phone and give us all the details. We will then issue you a "Return Number,'' which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

The manufacturers reserve the right to change specifications at any time because they constantly strive to achieve better quality equipment. We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

Please feel free to write or call us if you have any questions about the machine or the manual.

Thank you again for your business and continued support. We hope to serve you again soon.

grizzly.com®
TOOL WEBSITE

Buy Direct and Save with Grizzly® – Trusted, Proven and a Great Value!

~Since 1983~

Visit Our Website Today For Current Specials!

ORDER
24 HOURS A DAY!
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